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## AN OUTLINE OF LIVER FUNCTIONS AND JAUNDICE\*

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Jaundice is a symptom which may be extra- or intrahepatic in origin. It is a symptom of *vital importance* only when it is associated with hepatic insufficiency. The seriousness of jaundice depends either on the extent to which the vital function of the liver is impaired or the extent to which the cause of the jaundice may in time lead to hepatic insufficiency.

The liver manifests many activities. The importance of the liver cannot be appreciated until one views and comprehends its many important and diverse activities. Considering its many activities, its large factor of safety and regenerative capacity, one is not surprised that an adequate function test has not been devised. The tests of function are now directed toward ascertaining the extent of certain individual activities of the liver. If the liver possessed a *single* vital function, which is not likely, and if that function were known, then a single functional test might be devised. Until we find out why a hepatectomized dog dies in from twelve to forty-eight hours, we shall be working more or less in the dark insofar as adequate tests of the vital functions of the liver are concerned.

The activities of the liver may be outlined very briefly as follows:

1. *The liver stores food materials.*

- a. Carbohydrate in the form of glycogen or animal starch.

In fasting, the store lasts for only twelve to twenty-four hours.

- b. Protein is stored, but probably as liver protein and not as a special protein.

The liver of rats during a two-day fast loses 20 per cent of its original protein; other organs only 4 per cent. In a more prolonged fast, liver may lose 40 per cent of its protein.

- c. Fat. On a well-balanced diet liver fat is fairly constant, 2 to 4 per cent (dogs); 40 to 70 per cent is neutral fat; the remainder is phospholipins. Liver fat is increased by a fatty diet, and the liver may become 50 per cent fat. When the glycogen content of liver decreases, the fat content usually increases. Thus, on fasting, liver fat increases, if fat is present in the fat depots.

Fat content of liver is increased by chloroform, phosphorus and carbon tetrachloride, and the glycogen is decreased.

Alcohol speeds fat deposition in liver in the presence of a high fat diet. Fat accumulates in the liver in deficiency of pancreatic juice.

Feeding pancreas or choline prevents and reverses the fatty infiltration due

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- to a pancreatic deficiency, fatty diet, or cholesterol feeding.
- d. The liver stores the anti P. A. factor, the substance important (anti-secondary anemia factor) for building hemoglobin, and Vitamins A and D. It is rich in Vitamin B and G and stores Fe and Cu.
2. *The liver manufactures food materials.*  
Glucose is the sugar of choice of the body cells. Some levulose and but little galactose can be oxidized by body cells.
    - a. Liver converts glucose, levulose and galactose to glycogen and then, as needed, the glycogen is changed to glucose. Galactose is not a good glycogen former.  
Lactic acid is converted to glycogen in liver.  
Liver maintains blood sugar level.
    - b. Forms glucose from certain amino acids.
    - c. May make fat from glucose, protein and glycerol.
    - d. Synthesizes certain amino acids.
    - e. Probably desaturates fatty acids.
    - f. Makes various organic acids, which may be oxidized or used for synthesis and which result from deamination of proteins.
    - g. Makes Vitamin A from carotene.
    - h. Ketone bodies. One theory regards them as foods.
  3. *Other substances manufactured by the liver.*
    - a. Blood fibrinogen and heparin, or antiprotease. R. B. cells are formed in embryo.
    - b. Ketone bodies; glucose retards or prevents their formation.
    - c. Bile salts; makes and also destroys.
    - d. Cholesterol, possibly; at least liver is concerned in cholesterol metabolism.
    - e. Urea, from ammonia, which arises chiefly from deamination of proteins.
    - f. Uric acid, possibly; liver may destroy it also.
    - g. Next to muscle, liver is an important source of body heat.
    - h. Changes urobilinogen (urobilin is oxidized urobilinogen), which is produced normally in, and absorbed from the intestine, to bilirubin.
  - i. Forms some bile pigment or bilirubin from hemoglobin.
  - j. Blood albumin and globulin.
  - k. Glucuronic acid conjugation products.
  - l. Produces histamine in anaphylactic shock.
  - m. Very probably produces antibodies.
4. *Detoxication.*
    - A. By chemical means:
      1. Conjugation of toxic substance with:
        - (a) sulphuric acid, e.g. indoxyl sulphate,
        - (b) glucuronic acid, e.g. phenol, benzoic acid, menthol, etc., form glucuronides,
        - (c) glycine, e.g. benzoic acid plus glycine yields hippuric acid.
      2. (a) by oxidation,  
(b) reduction,  
(c) methylation,  
(d) acetylation.
    - B. By excretion in bile:
      - (a) heavy metal such as Hg,
      - (b) certain drugs,
      - (c) bacteria.
    - C. By storage in liver cells:
      - (a) strychnine, e.g., as in the chicken,
      - (b) dog's liver can destroy strychnine.
    - D. By reticulo-endothelial activity:
      - (a) removes bacteria, foreign protein, dyes, etc., from the blood stream. In Eck fistula dogs, or dogs with a chronic hepatic insufficiency, a meat ration causes a syndrome called "meat intoxication." Such animals do better on a high carbohydrate diet. They also do better if a source of glucuronic acid, chondroitin, is fed.
  5. *Blood volume regulation:*
    - a. Serves as a reservoir for red blood cells and fluid,
    - b. Tends to prevent blood dilution after drinking water, and serves as a

- c. "Flood chamber" to prevent over-distention of right heart.
- d. Some claim that the liver is important in maintaining the normal ionic equilibrium of the blood.

6. *Excretory substances in bile:*

Bile pigment  
Bile salts  
Fatty acids  
Alkali  
Cholesterol  
Phospholipins  
Calcium

Certain dyes, drugs (cinchophen, salicylic acid, Hg.)

Many texts include lecithin as a constituent of bile; recent studies show that lecithin or neutral fat is not present in bile to a significant extent.

7. *Liver is related to the glands of internal secretion.*

- a. Islets of Langerhans of pancreas.  
Diabetic liver practically glycogen-free. Insulin causes the diabetic liver to deposit glycogen.
- b. Epinephrine decreases glycogen in the liver.
- c. Removal of hypophysis or adrenals prevents or ameliorates glycosuria and hyperglycemia due to extirpation of the pancreas. This probably means that the removal of the hypophysis and adrenals reduces sugar formation by the liver.
- d. An extract of the anterior lobe causes ketosis probably by acting on the liver.
- e. A low glycogen reserve exists in the liver in hyperthyroidism.
- f. Liver insufficiency may cause infertility. A female Eck fistula dog has never produced young.

The foregoing outline enumerates the better known activities of the liver. Certain other well known facts pertaining to the physiology of the liver will now be mentioned.

8. *Factors of safety and regeneration of liver cells.*

Only 20 per cent of the normal liver may maintain its normal functions. The capacity of the liver to regenerate is remarkable. On

removal of 70 per cent of the liver in rats and dogs, 90 per cent regeneration will occur in a few weeks.

Restriction of portal blood supply, obstruction of a bile duct, or cirrhosis of the liver prevents or retards regeneration. Regeneration can occur, however, in a liver in which cirrhosis is progressing due to the administration of carbon tetrachloride. The regenerated liver cells are under certain conditions known to be more resistant to the poison which caused the necrosis.

The tremendous factor of safety in the liver means that at least 70 or 80 per cent of the hepatic cells must be impaired to give a positive liver function test.

9. *Effects of extirpation of the liver.*

- a. Death results in from twelve to eighteen hours.
- b. Hypoglycemia occurs, and glucose administration prolongs life up to twenty-four to forty-eight hours, but the dog dies with blood laden with glucose.
- c. Rise in bilirubin in the blood occurs, because it cannot be excreted by the liver.
- d. Urea falls to almost zero.
- e. Amino acids increase in blood.
- f. Uric acid increases.

Actual cause of death is unknown. Is it due to the loss of some single vital function? Or, is it due to the loss of the multifold activities of the liver?

### White Bile

When the surgeon opens the common duct he sometimes finds what he calls "white bile." This raises the questions: under what conditions is white bile found? And, what is its source?

White or lightly pigmented bile is found in the bile ducts under the following conditions:

- A. An obstructed common bile duct.
  - (a) With the gall bladder removed
  - (b) With a functionless gall bladder in place, or
  - (c) In long standing obstruction due to carcinoma, or from pressure on extrahepatic ducts by abdominal tumors; and



B. In severe toxic or infectious hepatitis.

The "white bile" is chiefly a secretion of the epithelium of the ducts.

The presence of "white bile" in the ducts always denotes the presence of hepatic injury. Such patients would be more susceptible to an anesthetic, and to trauma, and to the development of a serious hepatitis.

"White bile" or "hydrops fluid" is found in the gall bladder in the presence of cystic duct occlusion and in the absence of infection of the gall bladder.

### Jaundice

Jaundice is the term used to designate a yellowness of the skin, sclera and secretions due to excessive bilirubin in the blood. Jaundice or icterus must be distinguished from yellowness due to carotenemia or picric acid ingestion.

The blood of man normally contains from 0.1 to 0.25 mg. of bilirubin per 100 c.c. The renal threshold for bilirubin in man is about 2 mg. per 100 c.c., that is, bilirubin does not appear in the urine until the concentration in the blood is 2 or more mg. per 100 c.c. of blood.

In obstructive jaundice if 2 mg. per 100 c.c. of bilirubin are present in the blood for several days, jaundice or visible icterus occurs, and bile pigment appears in the urine. In hemolytic jaundice the bilirubin content of the blood must be higher than 2 mg. before the patient becomes jaundiced or bile pigment appears in the urine. The explanation offered for this observation is that in hemolytic jaundice the pigment is bound to protein, or some other substance, so that it does not readily pass from the blood into the tissues.

The most simple view of the various causes of jaundice, I believe, is that jaundice is due to a disturbance:

A. *Before the liver*—Hemolytic jaundice, hereditary and symptomatic (e.g., infectious diseases, pernicious anemia, etc.).

B. *In the liver*—Toxic and infectious hepatitis and cirrhosis. Hepatocellular jaundice; or intrahepatic jaundice.

C. *After the liver*—Obstructive jaundice, mechanical or inflammatory.

In hemolytic jaundice, bilirubin is made beyond the capacity of the liver to excrete it. If the secretory activity of the liver is

depressed in hemolytic jaundice, such has not been proven to exist. *Bile is formed and stools are heavily pigmented.* Icterus neonatorum is the best example. Familial jaundice is another example. In symptomatic jaundice, the causative agent sometimes affects the liver and then complicates the jaundice.

In toxic and infectious hepatitis and cirrhosis, the liver cannot remove bile pigment from the blood at a normal rate. The bile may be *normally pigmented (cirrhosis)*, or only lightly pigmented, depending on the degree of hepatic insufficiency.

In obstructive jaundice the obstruction does not have to be complete to produce jaundice. The secretory pressure of bile is about 30 cm. of water; but 20 to 25 cm. of water pressure in the common bile duct is adequate for the production of hyperbilirubinemia.

The obstruction may be due mechanically to a carcinoma of the pancreas or the ampulla of Vater, in which case the obstruction is usually complete and the jaundice grows progressively worse. It may be due to a ball-valve type of obstruction by a stone, in which case it may be intermittent. Courvoisier's law is helpful for the differential, but it holds for only about one-half of the cases; some say less, others more. A stone, of course, is more likely to cause colic. Obstruction, producing jaundice, may also be due to an inflammation of the ampulla or of the common and hepatic ducts (catarrhal jaundice). In catarrhal jaundice, however, hepatitis is frequently present and complicates the diagnosis.

In the differential diagnosis of jaundice the experience of the clinician and the history, associated symptoms and physical findings are of prime importance. There is no laboratory short-cut; a carefully taken and detailed history is very important. The laboratory aids give some idea of the hepatic damage, and, if properly interpreted, are of assistance in differential diagnosis. As will be seen from the table to follow, the results of laboratory tests do not *per se* differentiate between a medical and surgical jaundice due to obstruction of the ducts or a hepatitis. In the presence of complete obstruction of the common duct the differentiation is not so difficult (accuracy in the hands of a skilled physician is 80 per cent),



## LIVER FUNCTIONS AND JAUNDICE—IVY

TABLE I

Acute and Subacute Intrahepatic Jaundice 12 Cases	Chronic Intrahepatic Jaundice 2 Cases	Obstructive Jaundice —16 Cases— Duration 2 wks.—7 1/2 mo.
7+ galactose	galactose — in both cases	galactose
5- (jaundice subsiding) Urobilinogen present in all cases	urobilinogen present in both cases	urobilinogen absent from urine in all completely obstructive cases

but, when the obstruction of the duct is incomplete, the differential diagnosis is very difficult.

*Galactose tolerance test* (40 gm. are given with water on an empty stomach; urine is collected for five hours. Three gm. or more in the urine indicates acute hepatitis.)

Advantages:

- Rapidly absorbed.
- Utilized only by the liver.
- Low kidney threshold, if any.

In severe hepatic injury the liver cannot convert galactose adequately into glycogen, so an excess appears in the urine.

The test is positive (3 gm. or more in the urine) in 80 per cent of cases with acute hepatitis; positive in only 6 to 10 per cent of cases of obstructive jaundice.

*In acute hepatitis a negative result is obtained if the performance of the test is delayed until regeneration of liver has occurred.*

Positive test is about 100 per cent accurate for acute hepatitis if performed early; a negative test after two weeks may occur in acute hepatitis.

A negative test if performed early means:

- Mechanical block
- Obstructive catarrhal jaundice due to involvement of the bile ducts
- Or, a normal liver (e.g., hemolytic jaundice)

The results of urobilinogen tests are most valuable when one is performed daily for several days, i.e., a single test does not yield as much information as repeated tests.

#### *Hippuric acid test\**

Give 5.9 gm. of sodium benzoate in 30 c.c. of water, one hour after a breakfast of coffee and toast, and is followed by

one-half glass of water. Patient voids. Then urinates every hour for four hours.

Specimens are acidified to Congo Red with HCl.

The ppt. of hippuric acid is collected on a filter paper, dried and weighed.

Total hippuric acid eliminated by a liver with some reserve is from 3 to 3.5 gm.

This test determines one of the detoxicatory mechanisms of the liver. It should help to determine the choice of anesthesia. The synthesis of hippuric acid is related to the function of bile acid synthesis. Relief of stasis by surgery does not mean an immediate return of the liver to normal. With the exception of the hippuric acid test, in the absence of drainage of bile via a fistula, some claim that we have no other test better indicating the recovery of the liver. I have reason to believe, however, that *bilirubin clearance* (rate of disappearance of injected bilirubin from the blood), or possible *bromsulphthalein* clearance, will in time prove to be a more sensitive test of liver function, not of diagnostic but of prognostic value, than the hippuric acid test.

It is well to remember that serum phosphatase is markedly elevated in obstructive jaundice. It is elevated in various conditions producing hepatic cell damage. It has not been shown to be of value in the differential diagnosis of obstructive and intrahepatic jaundice.

Table I is a summary of the results obtained by Dr. Rosenberg, with the galactose and urobilinogen tests.

The results clearly demonstrate the usefulness and limitations of the two tests.

The diagnosis of a hemolytic type of jaundice is not generally considered to be difficult. The more important points follow:

Hemolytic jaundice, uncomplicated and hereditary

- Hereditary factor.

\*Quick. Am. J. Med. Sci., 185:630, 1933.

# LIVER FUNCTIONS AND JAUNDICE—IVY

TABLE II

Test	Acute Hepatitis	Cholelithiasis, Catarrhal Jaundice	Mechanical Obstruction
Bile in duodenum	May be none Occasionally in early stage	May be none at times	None, if complete
Urobilinogen in urine	Present or absent depending on whether bile pigment enters gut	Present or absent depending on whether bile pigment enters gut	None, if complete
Galactose tolerance test	Positive if performed within two weeks. May be negative later	Negative	Negative, unless acute liver damage is present
Cholesterol plasma serum	Esters decreased; total high early; normal or hypo-normal later	High in early cases	High, particularly in early obstruction
Duodenal drainage	Bile lightly pigmented, and no crystals	Pus cells. If bile pigment is obtained, there are no bilirubinate or cholesterol crystals	Blood in carcinoma. Cholesterol and bilirubin crystals if stone is in duct.
Stools	Bile pigmented usually	Bile pigmented usually	Blood in carcinoma alcoholic if complete
Hippuric acid test	Subnormal elimination	Subnormal elimination	Subnormal elimination

- b. Splenomegaly, usually.
- c. Increased reticulocytes, microcytes, and increased fragility of red blood cells.
- d. Indirect van den Bergh.
- e. Normal cholesterol; phosphatase normal.
- f. Normal galactose and hippuric acid tests.
- g. Urobilinogen in the urine; but little or no pigment; hence the name "acholuric jaundice." Urobilinogen in urine because there is plenty of pigment in alimentary tract, and liver is too heavily burdened with pigment to convert urobilinogen into bilirubin.
- h. Bile in duodenal drainage.
- i. Heavily pigmented stools.

These patients may have biliary colic from pigmented stones.

The differentiation between acute hepatitis, cholelithiasis and mechanical obstruction is not easy. (It is not in the province of this discussion to give the differential points of importance in the history and physical findings.) The laboratory results are outlined in Table II.

From a study of the table it is to be noted that laboratory diagnosis alone will not differentiate between medical and surgical painless jaundice. The history and physical findings and the experience of the clinician

rank first in importance. But, the tests shown in the table should frequently be of considerable help. I consider the results of the galactose, urobilinogen and duodenal drainage tests to be the most helpful.

I should never operate on the biliary tract of a jaundiced or non-jaundiced patient without performing before hand *an hippuric acid test or bromsulphthalein liver function test*, and *determining the bleeding time and coagulation time of the blood*, except when emergency is definitely indicated. One, of course, must also consider the condition of the kidneys and heart.

## Physiologic Disturbances Incident to Obstructive Jaundice

*Cause of death* is unknown. It is probably due to hepatic insufficiency. A terminal renal insufficiency occurs.

The presence of bile salts, which are the only known toxic constituents of bile, in the blood stream are probably not the cause of death because after several weeks the bile acid content of the blood decreases. In obstructive jaundice hepatic damage is known to occur; icteric necrosis, biliary infarcts, or biliary cirrhosis are found at autopsy. Further, hepatic regeneration does not occur to any appreciable extent.

The accumulation of pigment in cells *per se* is not serious because the patient with familial jaundice or the jaundice of hypertrophic cirrhosis may survive for years, dy-

## LIVER FUNCTIONS AND JAUNDICE—IVY

TABLE III

	Cases	No Bleeding Tendency	Bleeding Tendency	Results On those Patients Who Manifested a Bleeding Ten- dency
Chronic Cholecystitis and lithiasis	254	219 D O? P.O.D. O	35 13.7% 320"	24 given viosterol, bleeding time reduced to 130". No deaths. 2 P.O.D. 11 Controls, bleeding time cont. at 346". No deaths. 10 P.O.D.
Common duct stone	64	25 D O P.O.D. O	37 57% 330"	24 given viosterol, bleeding time reduced to 120", in all except 1. This patient died. 1 P.O.D. in the rest. 13 controls, bleeding time rose in 11, 385". Deaths 5. P.O.D. 8.
Surgical malignancies	24	14 13 op't. D 1? P.O.D. O	10 430"	8 given viosterol, in 6 bleeding time reduced to 190". 1 died, cardiac decompensation at 2.5 wk. In 2 vio- sterol had no effect. 1 died; stormy P.O.D. 2 controls, bleeding unchanged. Deaths 2, Chol- emia.

ing from a ruptured varix or evident hepatic insufficiency.

Dogs with obstructive jaundice generally die in three months, but occasionally survive six to twelve months. In man obstructive (complete) jaundice generally proves fatal in from four to six months, although some cases have survived much longer, although the possibility of a fistulous tract to the intestine has not always been ruled out in such cases.

*Osteoporosis* occurs in chronic icterus and is probably due to failure of the absorption of Vitamin D and the decreased absorption of calcium. Since in the absence of bile salts from the intestine fatty acids are not normally absorbed, they form Ca soaps and are passed in the stools.

*Hemorrhagic tendency.*—In some patients the fibrinogen value is decreased; in others the clotting time is prolonged, or the prothrombin is decreased; others apparently manifest prolonged bleeding when these factors are apparently normal. This suggests a disturbance of the retractility of the blood vessels. The clotting time may be normal, but the clot may lack firmness. No appreciable change in blood Ca is present.

*Bradycardia* occurs early in jaundice, and is more evident in young patients. It is probably due to bile salts, which increase the cardiac vagal tone. Liver injury may cause bradycardia.

*Pruritus.*—Cause unknown. Said to be

relieved by 1 mg. ergotamine orally or by the administration of bile salts orally.

#### Bleeding Tendency in Jaundice

Two very distressing complications are frequently encountered after surgery on the bile tract. The first is hemorrhage. The bleeding tendency in jaundice is undoubtedly related to the degree of liver damage. The mechanism of this relation is obscure, but the clinical facts are obvious. According to the reports from several clinics, 50 per cent of all postoperative deaths in patients with jaundice, or liver insufficiency, are associated with or the result of hemorrhage. Many clinical and laboratory methods have been recommended to determine the existence of the bleeding tendency, but none have been accepted as a reliable guide. As Colbeck has said, there is no definite method as yet for the evaluation of the bleeding tendency in jaundice.

The "venostasis bleeding time," suggested by the author, has been used successfully by McNealy and others. The method consists in placing a sphygmomanometer cuff about the upper arm with a pressure of 40 mm. Hg. to prevent venous return. This was done to increase the pressure in the peripheral vessels with the idea that the effect of any defect in retractility of the vessels, in clotting time, or in the firmness of the clot might be exaggerated. The skin of the forearm near the elbow over the pronator muscles is the site of the puncture. The punc-



ture is made with a mechanical stylet set at a uniform depth. We used a depth of 3.0 mm. This gave a bleeding time in over 100 normal subjects ranging from thirty seconds to three minutes. The upper limit of normal was set at 240 seconds. The blood was blotted with filter paper every ten or fifteen seconds.

A portion of the results obtained by McNealy, Shapiro and Melnick are shown in Table III.

Bile salts were administered to jaundiced patients with the viosterol, Vitamin D, to insure its absorption.

A study of Table III shows that bleeding time is of prognostic value and that viosterol improves prognosis, and that if viosterol does not work prognosis is bad.

A second complication, which does not occur as frequently as hemorrhage after surgery on the bile tract, is the so-called "liver death." This condition is characterized by a rise in temperature and pulse rate, anuria and uremic manifestation (azotemia). Autopsy reveals extensive regeneration of the liver and renal parenchyma. "Liver death" may also occur after traumatic rupture of the liver.

Three clinical groups (Heyd<sup>3</sup>) have been recognized. These groups are characterized as follows: (At least ninety-five cases have been reported).

*Group 1. "Rapid high temperature death."*

- a. Long clinical history of biliary tract disease, but apparently a good surgical risk. Blood and urine are normal.
- b. Patient passes into a semicomatose state after cholecystectomy.
- c. Temperature rises rapidly and death occurs in from twenty-four to forty-eight hours.

*Group 2. a. Patient is jaundiced and does not appear to be as good a risk as the patient in group 1, but is "properly prepared for operation," and is not apparently a bad risk.*

- b. At first a routine recovery occurs after some operation on bile tract.
- c. But, after two or three days, patient becomes somnolent, irritable, distended, and restless. Then,
- d. Oliguria, coma and death follow.

*Group 3. a. Patient has symptoms of calculous cholangitis, or cholecystitis possibly with involvement of the pancreas.*

- b. At first a routine recovery occurs after operation.
- c. But, after five or six days, oliguria develops, which may develop into anuria and death with symptoms of uremia.

Before considering this question further, cholemia should be described. Cholemia is a term used to designate a group of symptoms which commonly terminate a chronic icterus. These symptoms are: irritability, restlessness, melancholia, rapid pulse, slight fever, dry tongue, coma, delirium or convulsions and death. Cholemia is preliminary to or associated with the hepatorenal syndrome.

The "rapid high temperature death" characteristic of group 1 is not characteristic of operations on the biliary tract alone. It can occur after operations elsewhere. So, its relation to the liver is uncertain.

In groups 2 and 3, where jaundice may be absent, the death appears to be due principally to renal insufficiency, since at the time of onset of the symptoms blood sugar may be normal, and urea, which is formed by the liver, is still being formed and steadily increases in the blood, and bile may be present in the stools. At autopsy the epithelium of the convoluted tubules is found to be degenerated and areas of necrosis and fatty degeneration are found in the liver. This condition is referred to as a "hepatorenal syndrome." Such a syndrome may occur also in burns, intestinal obstruction, and hyperthyroidism.

*Experimental production.*

1. In rabbits, ligation of the left portal vein caused atrophy of two-thirds of the liver, oliguria, albumin, casts and red cells in the urine.
2. In rabbits, obstruction of the common duct followed by releasing the obstruction produced the clinical and pathologic picture of the hepatorenal syndrome.
3. Injection of a saline or watery extract of the liver of a patient dying from a "rapid high temperature death" into rabbits caused rapid high temperature death.

*Theories*

1. Necrosis of the liver results in the release of a powerful toxic substance which injures the kidney.
2. Necrosis of the liver releases foreign protein into the blood in such quantities that the capacity of the kidney to excrete it is overtaxed.

*The important point to remember is that in every biliary tract disease, the factor of safety in the liver is impaired to a greater or lesser extent. Hence, much attention should be given to the proper preparation of the patient for operation and to the selection of the anesthetic.*

The medical aspect of the treatment of jaundice is that for the treatment of hepatic insufficiency, that is to

Improve the detoxicatory and other functions of the liver.

1. Glucose.

A liver filled with glycogen suffers less from chloroform and phosphorus poisoning.

The meat intoxication of Eck fistula dogs is improved by glucose intravenously.

Animals and patients with chronic hepatic insufficiency do better on a high carbohydrate diet.

An injection of glucose may improve the coagulability of the blood in the jaundiced patient.

Ascites is more likely to occur in cirrhosis of the liver, if a high protein diet is fed than if a high carbohydrate diet is fed.

Glucose combats starvation ketosis.

2. Calcium.

Calcium protects the liver from carbon-tetrachloride poisoning.

Calcium intravenously improves the coagulability of the blood at least temporarily (six to twenty-four hours) in jaundice.

*Vitamin D* with bile salts in jaundice improves or returns to normal the bleeding time, if any hepatic reserve is present. *Vitamin D*, like carotene, the precursor of *Vitamin A*, is absorbed only when bile salts are present in the intestine. *Vitamin C* has been injected intravenously in hemor-

rhaging patients with apparently good results. *Vitamin K* (antihemorrhagic vitamin in chicks) said to be of value in hemorrhage of jaundice; also certain flavins, *Vitamin G*.

3. Blood transfusion.

The hemoglobin in grave jaundice and hepatic insufficiency shows undersaturation with  $O_2$ . In grave cases a transfusion should improve protein composition of the blood and oxygenation of the tissues, and benefit anemia when present.

4. Diet.

Dogs with hepatic insufficiency do best on a milk, cereal or bread, and corn syrup diet. They must have some protein. I have recommended an addition of glycine in the form of large quantities of gelatin. I believe extra vitamins should be supplied in concentrated form. Also, theoretically in chronic cases, glucuronic acid in some form, e.g., chondroitin, should improve the detoxicatory function of the liver.

5. Bile Salts.

In the presence of hepatitis or a liver that does not spontaneously secrete some bile, bile salts have no or only a slight effect. In hepatic insufficiency or hepatitis, bile salts are either not secreted in the bile or only to a slight extent.

It has not been proven that the administration of bile salts, after the surgical relief of jaundice or after the partial recovery of the liver from hepatitis, will increase the rate of disappearance of the jaundice, or improve liver function.

After partial recovery of the liver, bile salts do increase the volume output of bile.

They should be given in complete obstruction of the common duct to aid the absorption of *Vitamins A* and *D*.

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## BRONCHO-SINUSITIS\*

FERRIS SMITH, M.D.

GRAND RAPIDS, MICHIGAN

The purpose of this discussion is to promote a more general recognition of the conditions causing bronchiectasis and the adoption of appropriate methods for their control.

The title, broncho-sinusitis, was suggested by Wasson<sup>18</sup> in 1929 for infections involving the entire respiratory tract and particularly those of a chronic character.

Thompson<sup>14</sup> suggested, some seventeen years prior to this, that persistent bronchorrhea might result from chronic sinus suppuration. The subsequent years have produced numerous researches and extensive clinical papers to prove this assumption.

Sargent,<sup>12</sup> Rist,<sup>10</sup> Webb and Gilbert,<sup>19</sup> Peroni<sup>8</sup> and others have emphasized the importance of thorough sinus examination in cases of pulmonary disease.

Mullin and Ryder<sup>6</sup> have completed their classic studies on the lymphatic drainage of the nasal sinuses and the course of material aspirated into the tracheobronchial tree from the naso-sinus secretions. Opie<sup>7</sup> has demonstrated that influenzal pneumonia is almost invariably accompanied by sinus infection.

Graham<sup>3</sup> has called attention to the frequent acute inflammation of the mucosa of bronchial fistulae occurring about twenty-four hours after an acute infection of the sinuses and subsiding with the improvement of the disease in these cavities.

Numerous observers have variously reported the frequency of the association of chronic sinusitis and non-tuberculous bronchiectasis. Quinn and Meyer<sup>9</sup> report 58 per cent, Dunham and Skavlem<sup>2</sup> 73 per cent, Hodge<sup>4</sup> 75 per cent, and Clerf,<sup>1</sup> 82.4 per cent.

Many authors insist that the naso-sinus disease is the primary cause of the bronchiectasis. The clinical evidence and researches would seem to prove this. Most writers are of the opinion that the whole respiratory mucosa is affected and that the bronchitis and pneumonitis fails to resolve because of the continued infection in the sinuses.

A proper understanding of the relationship of the part played by the sinuses in acute and chronic bronchitis, bronchiectasis and pulmonary abscess presumes a knowledge of the normal and pathological physiology of the sinus linings, and general knowledge of their vascular and lymphatic drainage, together with the mechanics

which result in aspiration or droplet infection.

It is my purpose to discuss briefly the mechanics of normal sinus and nasal drainage; to discuss the lymphatic and vascular drainage in these areas and to demonstrate that this drainage may and does frequently result in involvement of the lymph glands in and about the bronchi, as well as the bronchial linings, in a manner which is difficult to differentiate from childhood tuberculosis. I wish to demonstrate further that a reversal of the course of the bronchial infection may occur in the aspiration types in a manner to directly parallel the inception and spread of infection in childhood tuberculosis, to produce a clinical picture which can be differentiated on the basis of one or two findings only and to correlate this knowledge with the general recognition that bronchiectasis results from inflammation weakening of the bronchial walls. Finally, I wish to discuss adequate and proper methods of sinus examination; to demonstrate the pathological changes found in sinus linings and to express an opinion as to efficient management.

We will trace the course of an infective agent from the time of its entrance into the nose or sinuses until a lesion of the bronchi, pulmonary tissue or the local lymph glands is produced.

The nose and sinuses are lined with ciliated, columnar epithelium and provided liberally with mucus-producing goblet cells. These cilia move in successive rows to produce a picture similar to a field of grain which is blown by the wind. The secretion of the goblet cells provides a sticky, viscous, rubber-like sheet which coats the tips of the cilia and is propelled toward the naso-

\*Read before the seventy-second annual meeting of the Michigan State Medical Society in Grand Rapids, September, 1937.



pharynx in the one case and toward the normal ostia of the sinuses in the other. Definite directions of movement carry the trapped foreign material directly backward from the nostrils and downward and backward from the side walls of the nose.

We must keep in mind that the sinuses are not in nor a part of the nose, but, rather, that they are accessory to it. They ventilate and drain into it. The direction of the ciliary wave motion of its linings is always toward the ostia and drainage is unaffected by artificial openings in any other area. *Infection or chemical substances may retard or paralyze the cilia and produce a situation favorable for absorption.* Under normal conditions a dye particle introduced into the nostril travels from three to four inches to appear in the nasopharynx in ten minutes.

It is at this point—e.g., the presence of secretion in the nasopharynx—that differences of opinion arise. One group contends that all bronchial infections secondary to the nose and sinuses result from aspiration, while another maintains that the mechanics of movement from this point onward plus the protective mechanism of the larynx and trachea, preclude such extension. They maintain that all such infections travel via the lymph and blood streams.

There should be no such controversy because the facts were clearly demonstrated by Mullin and Ryder<sup>6</sup> seventeen years ago, and have since been supported by the experiments of other workers.

A solution of india ink, allowed to flow into the nose, was rapidly inhaled. The effects in the lung were characterized by quick development and a massive character. The absence of any signs of absorption along the cervical or mesenteric lymphatic routes gave convincing evidence of production by pure inhalation.

This experiment was repeated with an injection of an emulsion of tubercle bacilli and the animal examined seven weeks later.

The lungs showed advanced tuberculosis of the right upper and middle lobes, with consolidation and moderately advanced tuberculosis of the bronchial nodes. The cervical nodes, spleen and mesenteric nodes were all negative.

The extension of infection from the nose to sinuses is a well-established and accepted fact. It is certain that the ethmoid cells are

involved in every protracted cold and that, in many instances, this infection remains latent after the immediate local disturbance subsides. We have just noted that drainage from these areas may reach the bronchi, etc., by the inhalation route. Mullin and Ryder also demonstrated experimentally that infection from the sinus cavity linings travels through the lymph channels and blood stream to produce the same type of lesion. They injected carbon particles and tubercle bacilli in the lining of a closed maxillary sinus and produced the same bronchial and pulmonary lesions obtained in the aspiration experiments. This work has since been supplemented by the splendid researches of Logan Turner, Pickworth and others on the pathways of infection from the sinus to the brain, as well as by many clinical observations. It has been confirmed recently beyond dispute. The trachea of an animal was resected and sutured into the neck before repeating the experiment. The results were identical.

The venous return from the posterior two-thirds of the nose and all of the sinuses other than the sphenoid collect in tributaries of the pharyngeal plexus. This plexus forms a mesh about the vault, posterior and lateral walls of the pharynx which freely connects with the tributaries of the superficial and deep jugular veins and with the intracranial base sinuses by a mesh of veins accompanying all arteries and nerves through the foramina of the cranial base. Lymphatics follow these routes. This accounts for enlarged, inflamed lateral bands and the granular pharynx in sinus disease.

The lymphatic glands related to the lower respiratory tract are classified and described by Delamare as follows:

#### Bronchio-mediastinal glands

- (a) Peri-tracheo-bronchial glands
- (b) Inter-tracheo-bronchial glands
- (c) Inter-bronchial glands.

The peri-tracheo-bronchial glands, which are designated as right or left, are about the size of a large pea. The glands on the right are larger and more numerous than those on the left. On both sides they are in intimate relation with the tracheo-bronchi, the inferior vena cava, the surface of the lung, the pulmonary artery, the vena azygos major, the recurrent laryngeal and

the pneumo-gastric glands. They are uneven in size and are more numerous under the right than under the left bronchus. Their anatomic relations are with the bifurcation of the trachea above, with the pericardium in front and behind with the pulmonary plexus and the anterior surface of the esophagus.

The inter-bronchial glands occupy the angles of the divisions of the larger bronchi and may be found even in the divisions of the fourth order. These glands are completely buried in the pulmonary parenchyma. They are in intimate relation with the branches of the pulmonary vessels, particularly with the pulmonary artery, which they may compress when enlarged.

It is easy to understand, from this description, how infection with resultant enlargement of these glands and involvement of the musculature and mucosa produces cough and pressure on important structures, as well as retention of secretions within the finer bronchi. We must go a step further to account for the bronchiectasis.

Robinson<sup>11</sup> has demonstrated from surgically removed bronchiectatic lobes that chronic inflammation of the bronchial wall, with frequent complete destruction of the muscle and elastic tissue is the most common pathologic finding.

Warner and Graham<sup>17</sup> have demonstrated on similar material that bronchiectasis may occur with neither fibrosis nor pleural adhesions.

We need only to determine the physiologic forces causing the dilatation. "These forces are, first, the direct pull of the expanding thorax on the bronchi, transmitted through the parenchyma; second, the difference in pressure between that in the lumen of the bronchus and that outside its wall occurring on inspiration. On expiration the bronchus becomes narrowed, owing to its elastic tissue, which becomes effective with the cessation of the forces causing dilatation."

"The forces causing physiologic dilatation acting on a bronchus which has lost much of its muscle and elastic tissue, such as occurs in bronchiectasis, will cause a dilatation greater than normal on inspiration, since there is not the elasticity to overcome. The bronchus will not return to its normal expiratory size with the cessation of the

dilating forces, since its power of contraction is diminished on account of the loss of elastic and muscle tissue in its wall. Therefore, the forces causing physiologic dilatation, if applied to a weakened bronchus, as found in bronchiectasis, will cause permanent or pathologic dilatation." (Warner<sup>16</sup>)

Atelectasis and fibrosis of the lung parenchyma increase the forces causing the permanent dilatation. The accompanying cough is also a potent factor in this accomplishment.

What is the sinus pathology producing or maintaining the bronchial changes?

a. It may be acute or chronic, hyperplastic or purulent. It may or may not produce exudate in quantity sufficient for appreciable drainage and this drainage may vary from a thin, dirty, gray watery secretion to a thick, creamy pus. The presence or absence of pus is not a criterion.

The local soft tissue change may vary from simple congestion to total necrosis with abscess formation. Tilley<sup>15</sup> points out in a recent article that there is frequently residual infection in the bony capsule of a sinus which is a potent focus of vascular infection.

The symptoms of bronchiectasis are typical. Warner<sup>16</sup> states that the onset of most cases may be determined by the history alone. The common local symptoms are "a cough and sputum influenced by posture and the sputum moderate in amount, often accompanied by blood spitting and usually not foul smelling but practically always chunky." In his experience only 20 per cent of the patients had the large quantity of foul sputum of the classic picture. Blood spitting occurred in 45 per cent and the "dry" type occurred in only 2 per cent.

Much of the damage is already done in these cases, but, regardless, the sinuses should be carefully appraised and adequately treated in the effort to check the progress of the bronchial lesion. The treatment of the advanced bronchiectasis is surgical but this should not be undertaken until the sinus condition has been properly managed.

It is our desire to awaken an interest in the earlier lesions such as frequent recurrence of colds, bronchitis and coughs in infancy and childhood. We may add the cases of unverified childhood tuberculosis.

One may aptly quote an old axiom that "an ounce of prevention is worth a pound of cure." Chronic bronchitis and bronchiectasis has its origin frequently in the minor maladies of infancy and childhood. It is our desire to prevent the child of today from becoming the bronchiectatic of tomorrow.

The infant is occasionally born with pus in the nose and antrum and very frequently suffers a birth injury which lays the foundation for much future difficulty. I am referring to the dislocation of the cartilaginous septum which was described by Metzenbaum.<sup>5</sup> Pressure on the nose during delivery dislocates the cartilage from its groove in the vomer to produce a characteristic deformity which is easily recognized and readily corrected with the fingers. This is probably one of the commonest causes of the septal deformities which are noted so frequently in later life.

The child with frequent head colds has an ethmoid involvement or such an involvement linked with infection of the antrum. The background for this may be dietary, metabolic or mechanical as the result of deformities, but the fact remains that such infection is residual in these cells. The frequent head colds are an exacerbation of the latent process. In due course bronchitis accompanies the cold. The infection has traveled via the lymphatics and the blood stream to involve the bronchial lymph glands or inspiration infection has occurred. The whole process may be healed in most cases by proper attention to the existing sinuses, that is, the antrum and the ethmoid, together with proper care of the tonsils, adenoids and any local nasal disturbance.

Much of the treatment carried out is of little value and in some cases of positive damage. The use of solutions and drops to shrink the membranes and diminish the mucus secretion is an affront to nature's effort of correction. The congestion, the increased flow of mucus and the rapid exfoliation of surface cells are all efforts to localize and carry away the invading organism. The treatment should be systemic rather than local. "Packs" with silver solution, et cetera, during the subacute and chronic stage have a value in regulating the local circulation and a possible slight secondary effect on the sinus linings, but none of the drug can nor

does enter the involved sinus cavity. I wish to emphasize again that the sinuses are in no way a part of the nose, but are accessory to it. The increased mucus which follows the use of these packs results from the local irritation of the drug and does not come from the sinus cavities. A proper treatment should consist of dietary arrangement, correction of metabolic faults, displacement of ephedrin into the ethmoid cells and other cavities by the Proetz method, where the age of the patient permits, stimulation of the histiocytic defense by one or more small doses of x-ray and, possibly, one or more irrigations of the infected cavity. A single such irrigation frequently suffices to clear up the process. One or more such x-ray treatments, with proper internal medication frequently checks the bronchitis and eliminates the cough.

In late adolescence and adult life we find the evidences of chronicity with many or all of the pathological changes already described. The lining membrane, long the site of chronic infection, is no longer a mucus membrane but a pathological menace which demands treatment as such. It must be as completely eradicated as such pathology elsewhere in the body.

I wish to call attention to a most important finding in the history and local examination which receives scant, if any, attention. I am referring to the statement of the patient that he has a mild catarrh and the observation upon the part of the examiner of a scant, thin, gleet-like discharge post-nasally and in the naso-pharynx. A sinus lining producing drainage of this type is most prone to cause systemic, psychic and mental pathology. Both the examiner and the patient are much concerned by the presence of thick creamy pus but only casually interested in the scant watery discharge. The pus is evidence of a good local phagocytic defense, whereas the thin discharge results from a feeble local resistance. Such a discharge exuding from a wound in the hand or the arm would invariably be accompanied by a lymphangitis and frequently result in grave systemic involvement. Such evidence in the nose or naso-pharynx demands the most careful investigation and care.

All cases of chronic sinus disease are not surgical. The management depends on the



chronicity of the disease and the type of infection. One group demands local and dietary management while another has a hypometabolic background. Another group of border-line cases should be given the benefit of every type of useful local and general treatment over a sufficient period of time before resorting to surgery. A third group of patients is distinctly surgical. All ethmoid cases in which there are no other involved sinuses and in which the cells still contain some air are given long periods of displacement treatment before resorting to surgery. A large proportion of this group of cases recover without surgical intervention. In other instances where the cells do not contain air, in other words where they have been filled with hyperplastic membrane, surgery is demanded. It is obvious that medication cannot be introduced into a cavity that has no air content. The use of drops, sprays, packs, et cetera, locally in such cases is pure fraud and should be abandoned. In those cases where surgery is demanded, the cavity should be approached under direct vision in order that the diseased lining may be completely and meticulously removed. Every vestige of such a lining must be removed in order to prevent some recurrence of the disease. (Smith<sup>13</sup>)

The rhinologist is to blame for the attitude of the internist and the afflicted public towards surgical intervention in this locality. It results from his failure to accomplish a cure by the half measures which

have been practised intra-nasally and in the local care of the cavities.

A clearer appreciation of this problem by both the internist and the rhinologist, with a proper surgical management of these patients, will regain the confidence of the public and eliminate ultimately much of the present distressing problem.

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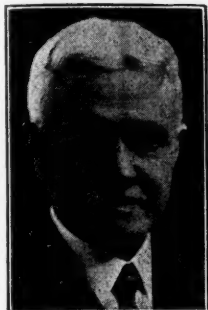
### Management of Facial Injuries Caused by Motor Accidents

To obtain successful and satisfactory end-results in the surgical treatment of facial injuries, a systematic examination of the patient is of primary importance. Claire L. Straith, Detroit (*Journal A. M. A.*, Jan. 9, 1937), suggests that it include careful inspection and cleansing of all lacerations, with removal of gross foreign bodies, careful palpation of all facial bones, palpation of the nose and intranasal inspection and palpation of the oral cavity. Facial disfigurements are a source of great mental anguish and not infrequently engender psychologic handicaps that ruin social and business careers. In spite of every precaution, infections as well as other complications may supervene and make immediate surgical treatment impossible. Scars, crushed facial bones, loss of eyebrows, ears and nose—all such disfigurements require subsequent correction if the victim is to take his place again in society. Plastic procedures should not be undertaken, how-

ever, until the lapse of two months after every vestige of infection has disappeared. To intervene prematurely in these cases is to court disaster. Old scars should be excised and resutured with subcuticular stitches. Depressions of the nose, forehead or malar prominences should be built up with rib cartilage transplants. Before applying the cartilage transplant, one should make a lead model made from a plaster impression of the face. At the operation, the cartilage should be trimmed to fit the depression on the sterilized lead model. This ensures greater accuracy in restoring the normal contour. Severed noses may be replaced by plastic procedures. It is important that the skin to be transplanted should match the integument of the face in both color and texture. In women, the forehead flap method is most satisfactory. The resultant forehead scar can easily be concealed by the hair dress. In men the skin beneath the ear and overlying the sternocleidomastoid muscle is preferable. This is brought to the face by way of a tube pedicle.

## YEAST DERMATOSES: CONTACT DERMATITIS\*

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The affections included under the above titles are not related to each other, but their discussion seems justified on account of their importance in cutaneous medicine. Investigation has shown that a number of cutaneous and mucous membrane affections formerly described as entities have been found to be due to yeast or yeastlike microorganisms. Among the cutaneous affections are erosio-interdigitalis, perlèche, waterbed dermatitis, paronychia, onychia, and, possibly, seborrheic dermatitis. In addition, a mycotic dermatitis frequently occurs beneath the breasts in fleshy women, in the axillary spaces, in the ano-genital region, and occasionally

the affection becomes generalized. Two or more or all of these affections may co-exist in a given patient. Through experimental work all have been produced by inoculation of cultures taken from patients exhibiting the various types of dermatitis.

### Yeast Dermatoses

*Erosio-Interdigitalis*.—This type occurs on the web of the fingers, usually on the third and fourth interspace. It may occupy all of the interspaces and it sometimes occurs between the toes. It is characterized by a shiny red area surrounded by a collar-ette of scales, or it may be represented by an accumulated mass of sodden, moist, whitened epidermis. Vesicles are usually absent, though points on the reddened area may indicate former vesiculation. This form of moniliasis is exceedingly difficult to eradicate.

In addition to the erosio type of lesion, a vesicular and papulo-vesicular eruption occurs in the interdigital surfaces with occasional maceration and fissuring.

*Perlèche*.—In this condition, there is an inflammatory reaction occurring at the angles of the mouth, usually in children. It is characterized by a thickening and whitening of the epithelium, together with fissures. The affection sometimes spreads toward the center of the lip and over the glabrous skin in the immediate vicinity. The thickened epithelium, often likened to mother-of-pearl, is sometimes easily detached. Occasionally, a moderate degree of crusting occurs. The

fissures are superficial and rarely bleed and ulceration does not occur. A scaling dermatitis of seborrheic type sometimes occurs in the immediate vicinity.

*Waterbed Mycosis*.—This form is characterized by the development of herpetic-like vesicles with red areolæ, together with pustules. These develop in a continuous water bath or on areas of the skin where moist dressings are applied over a considerable period of time. A frequent site is the abdomen, following laparotomy where moist hot dressings have been employed. At times the inflammatory reaction becomes marked, in which case redness, edema, weeping and crusting occur.

*Paronychia*.—Mycotic paronychia presents a characteristic picture and occurs in two forms, acute and chronic. The acute form is quite generally distributed, but occurs frequently in workers in fruit canneries and other industrial laborers. The chronic form presents a characteristic picture described by MacLeod as a "pad or bolster-like swelling of the nail wall." This enlargement is most marked at the base of the nail and gradually tapers down on the sides toward the distal end of the nail plate. The degree of inflammation varies in different cases and there is usually an associated dystrophy of the nail plate, due to interference with the formation of the nail at the lunula. In acute cases, such as described by Kingery and Thienes, seen in workers in fruit canneries, there is much swelling and pain and often shedding of the nail. These cases, together with those de-

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scribed by Sutherland Campbell produced by orange juice, are industrial dermatoses.

Monilial onychia resembles the ringworm type. In the chronic form transverse ridges occur in the nail plate and it becomes opaque, thickened, discolored and brittle. Subungual keratoses are present beneath the lateral and distal portions of the plate, causing it to be raised from the bed.

*Dermatitis Seborrhæica.*—The clinical description of this form of dermatitis will not be outlined as it is familiar to all. The point of interest in this connection is the fact that a yeast-like organism, spore of *Malassez* or *pityrosporon* of *Malassez* was cultivated by MacLeod and Dowling from all types of this affection and the disorder reproduced by experimental inoculation. In their work they found it necessary to inject the cultures intradermally or to rub them into lightly scarified areas, to reproduce the affection.

*Glabrous Skin Types.*—On the glabrous skin a mycotic dermatitis is characterized by variously sized, well-defined, circular, red, scaling patches. By fusion gyrate configurations are produced. Moist crusting patches, suggesting eczema, occasionally develop, while in widespread cases there occurs simply a dry dull red scaling dermatitis. Patches begin with vesicles or vesico-pustules, which rupture, leaving denuded red areas surrounded by rings of detached epidermis. These spread peripherally and by coalescence with others form the patches. By the development of new vesicles in the vicinity and their undergoing the above evolution, large areas become invaded. In the crotch and beneath the breasts and in other intertriginous regions, the bottom of the cleft is usually fissured, while the skin in the involved area is shiny, light to dark red, presents some moisture and has scale covered margins which are polycyclic in outline. When the ano-genital region is involved, varying degrees of itching occur, for the relief of which scratching is practiced, which results in thickening, excoriations and fissuring of the skin. In the anal region the erosio type seen between the fingers is sometimes present.

Patches of dermatitis characterized by redness and vesiculation, scaling and crusting, may also be found on the dorsum of

the hands and on the forearms. Involvement of these areas frequently occurs in association with paronychia seen in workers in fruit canneries.

*Monilial Infection of Mucous Membranes.*—In addition to thrush, which has long been known to be of mycotic origin, other forms of stomatitis and glossitis occur. As there is no symptom-complex characteristic of monilial infection, and as these organisms are sometimes found as saprophytes in such diseases as syphilis, some difficulty is encountered in recognizing these affections.

On the lip and buccal mucosa and on the mucous membrane of the pharynx and larynx, grayish white membranous pellicles of varying dimensions are seen. These pellicles are translucent and usually easily detachable. They also occur on the tongue and gums. Occasionally there is apparently more thickening when the pellicles become more adherent, and when detached leave superficial erosions, thus presenting a clinical picture of leukoplakia.

On the buccal mucosa Engman and Weiss early described a lesion which occurred as a glistening white mat of filiform projections situated on a white macerated base.

On the tongue Zeisler described scroll-like patterns resembling geographic tongue. Robinson and Moss described an acute form in which the papillæ were absent, and the surface of the tongue presented a smooth or slippery appearance like wet, red rubber. Miller and Morrow described a deep form in which a gumma-like lesion developed in the soft palate in the tonsillar region. This lesion developed acutely and caused perforation of the soft palate.

*Etiology.*—Cutaneous and mucous membrane mycotic infections may occur at any age from infancy on and in both sexes. Paronychia is at times an occupational affection induced in the cases described by Kingery and Thienes by contact with fruit juices in cannery workers, and by orange juice in cases described by Sutherland Campbell. It frequently occurs in women who handle sugar, such as those employed in confectionery factories, and in pastry cooks and so on. Diabetes is occasionally a predisposing factor in the waterbed type. In-



fection of the skin in infants frequently comes from oral and intestinal thrush and in adults not infrequently from the stools. The organism most frequently found is *monilia albicans* (formerly *oidium ablicans*). *Cryptococci*, *pityrosporon* of *Malassez* and other yeast-like organisms are also concerned in the production of these mycoses.

*Diagnosis.*—The major portion of cases of mycotic infection of the skin due to *monilia* and related organisms usually present sufficiently characteristic symptoms for their recognition. A microscopic examination in all cases is essential. Scrapings from the lesions are mounted on a slide in a 10 per cent to 25 per cent solution of sodium hydroxid, over which a cover slip is applied, and gently heated. The organism shows plainly and presents the following characteristics with a medium high power objective. Mycelium and spore-like bodies are seen. The mycelia are more delicate and less refractile than those of ringworm. Septa are rarely demonstrable. Oval spore-like bodies with buds attached to the ends are also present.

In young cultures the organism appears chiefly as round or oval cells, which multiply by budding. In old cultures hyphae develop

*Treatment.*—Oral thrush in infants responds well to swabbings with a 1 per cent solution of gentian violet, together with mild alkaline mouth washes. For superficial lesions of the mucous membranes of the mouth and vagina, a 3 per cent solution of gentian violet is efficient, using it as a swab twice daily. Alkaline mouth washes for the oral cavity and a douche containing a 1:2,000 solution of potassium permanganate for the vagina facilitate recovery. For the deeper lesions on the oral mucosa, surgical excision, roentgen rays and the internal use of potassium iodid may be necessary.

Paronychia responds readily to the local application of a 5 per cent suspension of chrysarobin in chloroform. This is very efficient and was originally recommended by Morrow and Lee for treatment of chronic paronychia before moniliasis had been recognized. In the erosio type, which is resistant, the parts are to be kept dry. The local application of chrysarobin in the

strength of 5 per cent or 10 per cent, or tincture of iodine, is valuable. In the water-bed type suspension of wet dressings, together with the application of a soothing lotion, such as the aqua calcis and zinc oxide lotion, together with a 10 per cent naftalan, or 2 per cent ichthyol ointment, soon relieves the condition.

In the intertriginous type occurring especially beneath the breasts, and in the crotch, painting with a 3 per cent solution of gentian violet is very efficient. When much inflammatory reaction is present, a preliminary treatment for several days may consist in soaking the parts twice daily with a hot solution of potassium permanganate in the strength of 1:2000, dressing the parts in the interim with an ointment containing 10 per cent naftalan.

In *Perlèche*, Finnerud found the local application of an 8 per cent solution of silver nitrate efficient. This application may be repeated at three or four day intervals. Prophylaxis is necessary in this condition when occurring in epidemics and consists in the use of individual drinking cups and towels, and careful sterilization of the utensils used by the patients, and also avoidance of direct contact.

### Contact Dermatitis

Dermatitis, presumably produced by external irritants, is among the commonest of cutaneous disorders for which patients seek relief. These cases cover a broad field, beginning with the simple dermatitis venenata group, produced by ivy, primrose, and so on, and ending in that large group of cases which may be termed trade or professional dermatitis or eczema. In the venenata type hypersensitiveness is usually specific and restricted to a single irritant, while in the second type, multiple sensitizations occur simultaneously or successively and there is in addition an unknown factor, operative in certain cases, which induces secondary eczematization.

The symptoms in all of these cases are sufficiently similar to be classed together. It is important, however, to be able to distinguish between them for the reason that dermatitis venenata is a comparatively simple affection running its course in a short time and does not recur unless contact with the same irritant is repeated, whereas the

other type may continue indefinitely through the development of new sensitizations. The recognition of either type is not difficult, but the discovery of the exciting irritant often presents a problem.

The number of substances capable of producing dermatitis by contact is endless. There are, however, certain ones that are responsible for the major portion of cases. Prominent among these are plants (ivy, primrose), animal proteins (hair, dandruff, feathers), and dyes, cosmetics, matches and chemicals.

A clue is sometimes suggested by the season of the year when the dermatitis develops and also by the areas of the cutaneous surface first attacked.

Ivy and ragweed dermatitis occur during the summer; primrose dermatitis at any season but often augmented at Eastertime when these plants are extensively distributed. In the autumn and early winter, dyes in furs become important. A dermatitis recurring on Monday suggests para-red used as a pigment in the rotogravure section of the Sunday paper.

The location on the skin is often suggestive of the nature of the irritant. When the dermatitis begins on the neck, the dye in the fur collar is suspected. When extending over the forehead from the scalp, hair lotions and dyes may be responsible. When patches are situated under the vest or trouser pocket of a man, matches are immediately incriminated. It is sesqui-sulphid of phosphorus that is the active agent in the last named cases.

Among the common irritants, in addition to the above, are: paraphenylendiamin, used in hair dyes and for dyeing fur. This substance is an excellent dye, producing a fixed black color, but has unusual irritating effects. Pyrogallol also is found in hair dyes, usually claimed to be walnut stain, and often produces dermatitis. Anilin dye in face powder and rouge and powdered orris root in face powder are common irritants. Toilet water containing bergamot may produce dermatitis and pigmentation upon exposure to the sun's rays (Berloch dermatitis). Various perfumes and perfumed cold cream, Lash Lure (an eyelash dye) and mascara (a dye).

Picric acid and butysin picrate, used in the treatment of burns, often produce a se-

vere dermatitis, which may be accompanied by general autointoxication.

Other irritants include: adhesive plaster, insect powder (pyrethrum), hexylresorcinol solution S. T. 37 (an antiseptic), novocaine and related substances, formalin, orthoform, metol (used by amateur photographers), lacquer (used on canes, Mah Jong sets and other articles). This preparation is manufactured from a Rhus varnish. Woods—coco-bolo, yew and numerous others; turpentine is a very common irritant due to its extensive use in house renovation. It is interesting to note that pyrethrum used in insect powder is a form of chrysanthemum. An epidemic of dermatitis produced by this chrysanthemum was reported recently by Sequire from Africa.

The clinical symptoms of the venenata type range from erythema to gangrene, depending upon the exciting factor. In the early stages there is an erythema limited to the area of contact. This is shortly followed by edema, swelling, vesiculation and crusting. Occasionally, secondary infection is indicated by pustulation. At times the dermatitis spreads beyond the demonstrable area of contact and may, through invasion of successive areas, continue to develop over a period of several weeks and over a large proportion of the cutaneous surface. In these cases the original irritant produces a severe local reaction in which toxic substances are formed that presumably induce the widespread eruption similar to the "id" eruptions from local infections seen in the mycotic diseases. In the major portion of these cases the dermatitis develops within 24 to 72 hours after contact with the irritant. In recurrent attacks, particularly in that form produced by primrose, ragweed and others, the inflammation may be subacute and resemble eczema. In these the lesions are erythematous-vesicular or erythematous-squamous and are accompanied by infiltration and sealing.

*Match or Match Box Dermatitis.*—This form of dermatitis was originally recognized by Rasch in Denmark. The affection begins on the thighs or on the side of the abdomen under the trouser or vest pocket where matches have been carried. In these areas there is a well defined patch of scaling dermatitis. Somewhat later the affec-

tion involves the face, lids, hands and other regions of the cutaneous surface. On the face the reaction may be so severe as to entirely close the eyes with the external edema and swelling.

Contact dermatitis furnishes a large number of cases eligible for compensation under the industrial compensation act. The determination in each individual case as to whether the articles contacted in the work are responsible for the dermatitis frequently presents a delicate problem for the physician. Foerster states that the majority of industrial dermatoses in this country are cases of contact dermatitis and are due to acids, alkalies, caustics, oils, greases and solvents. In Ohio, Schwartz found that the majority of industrial dermatoses have occurred in workers with oils and cutting compounds and in the rubber industries. It is well known that sensitization in many instances only develops after prolonged contact with certain substances, both chemical and plant, which fact adds to the difficulty of the solution of the problem. For example, a physician doing laboratory work may handle formaldehyde for years with impunity and then suddenly develop a sensitization to it which handicaps his further professional activity, and again sensitization to primrose has been developed through prolonged contact.

*Diagnosis.*—As stated above, it is apparent that the recognition of contact dermatitis is not difficult, but the discovery of the exciting agent often presents a problem. A careful search of all contacts with possible irritants is made and any articles suspected may be employed for cutaneous testing. The patch test originally described by Jadassohn and popularized by Bloch is the one employed in these cases. In this test the suspected substance is placed on a piece of linen and applied to the normal skin and this is covered with a piece of gutta percha tissue or oiled silk and held in place with adhesive plaster. It is removed after 24 hours. A positive reaction is indicated by a dermatitis of the nature of the one primarily exhibited. It may occur within a few hours or be delayed several days, depending upon the degree of hypersensitivity of the patient. The test should be ap-

plied as near as possible to the area of original dermatitis as a sensitization may be more or less restricted or localized. While this test is valuable as confirmatory evidence, a negative reaction does not necessarily prove that the suspected irritant is not the cause of the dermatitis.

In the dermatitis venenata type the antibodies are fixed to the epidermal cells, hence the P. K. passive transfer is not possible as there are no circulating antibodies.

*Treatment.*—The most important task is discovery of the irritant and its removal from contact with the patient. The treatment of the immediate attack consists of both local and internal applications and agents. An efficient method is the employment in the early stages of an aqua calcis lotion (sodium biborate, 10 gm.; amyllum, 15 gm.; zinc oxid, 15 gm.; liquor calcis, 120 gm.; aqua rosa q. s. ad., 240 gm.) several times during the day, alternated with the application of an oily cream such as the following: bismuth subnitrate, 4 gm.; zinc oxid, 8 gm.; olive oil, 120 gm.; liquor calcis q. s. ad., 240 gm. After two or three days, when the affection is less acute, the same preparations may be used during the day with an ointment containing naftalan or ichthyol over night (naftalan, 10 gm.; zinc oxid, 25 gm.; petrolatum q. s. ad., 100 gm. Ichthyol, 2 gm., may replace the naftalan in the above formula). In some instances where pyogenic infection has developed, a solution of aluminum subacetate or potassium permanganate may be necessary. The use of extracts of plants for immunizing and curative purposes varies with individual opinion. In ivy dermatitis Schamberg advised the internal administration of the tincture of *Rhus toxicodendron*, compounded as follows: Tincture *Rhus toxicodendron*, 1 gm.; alcohol, 5 gm.; syrup of orange q. s. ad., 100 gm. The preparation is given after each meal, beginning with the dosage of one drop, increasing one drop each dose to twenty-one, after which one teaspoonful is given once a day.

Immunizing injections are of value in some cases and may be employed both for immunizing and curative purposes. Brunsting found the use of ragweed oil of little value either as a preventive or curative

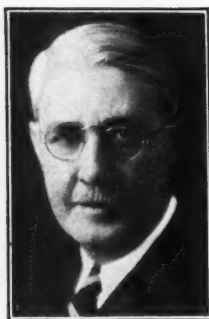


measure. A method of treatment of all types of contact dermatitis which has been of great value to the writer is the use of sodium thiosulphate. This is given by intravenous injections as follows: one-half gram the first day, one gram the second,

third, fifth and seventh days. This drug has the ability of overcoming hypersensitivity to a high degree. Cases that formerly extended over a period of several weeks commonly clear up in a week or ten days under its administration.

## TREATMENT OF FIBROID TUMORS AND BLEEDING OF THE MENOPAUSE\*

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In a discussion of the x-ray treatment of patients presenting themselves with symptoms of uterine bleeding, it would be extremely interesting to cover the entire subject, but because some of the newer applications, such as the treatment of the pituitary gland, in younger women is still in the experimental stage, and because we do not believe in, nor use, a temporary sterilization dose on younger women, this paper will be confined to patients of about forty years of age. They may either have menorrhagia or metrorrhagia (in which no pathologic lesions may be found upon examination), or a definite fibroid tumor with or without bleeding. Pa-

tients presenting themselves with the above symptoms, who after proper clinical examination reveal no gross ovarian pathology, obtain very satisfactory results with proper x-ray therapy. It seems logical to assume that neither surgery nor x-ray will be the ultimate treatment employed in these conditions, as it is our opinion that these are but symptoms of endocrine imbalance, and in the end endocrinologists will care for them.

Advances in medicine are slow. New methods are adopted only when sufficient experience has been accumulated to prove that the new form of therapy will irradicate the disease and cause less deviation from the normal than previous methods. Surgery is an older form of treatment than radiology, and has been established as the preferred treatment of both fibroids and bleeding. This leaves radiology in the position of proving its equality or superiority before it can be expected to be adopted as the preferred mode of treatment.

Let us begin by stating what surgery has to offer. In tumors of the uterine body, both carcinoma and fibroma, and in bleeding without these conditions (we include car-

cinoma of the body of the uterus because at times the most efficient examination fails to prove its presence), surgery, in removing the uterus, removes the pathology. It assures the patient that she will be relieved of her symptoms and, unless she has a carcinoma of the body of the uterus, she will remain well. In cancer of the body between fifty and sixty per cent will be cured. In many non-malignant cases, the ovarian function can be preserved. This at first glance appears to be a panacea, but at what costs are these results obtained?

### Operative Mortality

The question regarding whether a total or a sub-total hysterectomy should be done, when no known malignancy is present, is still a debatable one in surgical literature. We have no doubt that in most of the larger hospitals either a total hysterectomy or some form of operation that removes the mucosa of the cervix is done, but in the hands of many operators, total hysterectomy is not done because of the higher mortality. Published statistics for hysterectomy in some of the larger hospitals, such as St. Luke's in New York City, quoted by Wood, give an operative mortality of 1.5 per cent

\*Read before the Seventy-second Annual Meeting of the Michigan State Medical Society in Grand Rapids, September, 1937.

in one thousand cases. The Mayo Clinic reports for 1931, where 473 cases are reported, 287 total and 186 sub-total with eleven deaths or 2.3 per cent mortality. Many published reports establish these figures as correct for the best surgeons, but we have knowledge of hospitals where the mortality runs as high as five per cent. So we will grant that surgery removes the disease, but with a conservatively estimated mortality of over three per cent.

In many cases where the cervix is not removed we believe there is an additional mortality, the size of which we cannot compute, as there are no given statistics. This is the mortality that follows malignancy developing in the retained cervix. In a series of 150 cases of carcinoma of the cervix, we found 11.8 per cent were in retained cervixes. You may claim this is due to poor diagnosis, but these cases are from the average men in an average community. Five of these cases did develop the disease within the first year, showing definite lack of accurate diagnosis, but the remainder show periods varying from two to eighteen years before the carcinoma developed. The percentage of carcinoma in our series is very high, and is probably due to the small number of cases, but carcinoma of the retained cervix is a factor which can not be neglected when the mortality from any form of treatment is computed. No case in our series treated by x-ray has developed a carcinoma of the cervix and there has been no mortality from the treatment.

### Morbidity

Anyone observing a large group of cases after hysterectomy will admit that (barring the immediate mortality) the results are good. However, a certain number of these cases will develop definite sexual dysfunction. At times this may be due to defective surgery which causes mechanical difficulties. It is a serious complication when these results occur, because, if the ovaries are left in place, ungratified sex impulses can be very disastrous to the individual involved. Patients treated by irradiation, upon careful questioning as to sex function, reveal that there is little if any immediate change. Changes occur, but they are gradual and take several years to develop. While

this is not ideal, it more nearly approaches the normal physiological condition which occurs in women at this period.

Another form of morbidity following surgery and less frequently present after x-ray therapy, is the development of ovarian pathology, which necessitates subsequent surgery. The exact number of such cases is difficult to determine, but its occurrence must be acknowledged by all.

In all the discussions relative to the proper methods of treatment certain contraindications to the use of x-ray are mentioned, the most important of which is sarcomatous change in the fibroid tumor. There is great divergence of opinion in the literature as to the frequency of sarcoma of the uterus. Lynch showed 4.6 per cent present in 683 cases. Kaufman in his textbook on pathology says it is most common in the submucous type and quotes Evans as having found it in 1.8 per cent of 4,000 operative cases. Wood, after examining 1,000 cases, gives no percentage, but says it is rare.

The following is a quotation from Corscaden and Stout, 1929: "A very extensive résumé of the literature was made by Piquard in 1905. Between the years of 1857 and 1905 he collected reports on 127 cases of sarcomatous degeneration, including 5 of his own. In 103 of these the diagnosis was based upon morphological evidence alone. Of the remainder 4 must be discarded because of doubt as to whether they are sarcomata or carcinomata. Eight were found to have invaded surrounding structures. Fifteen recurred after removal and in 8 there was metastasis. Therefore, in this forty-eight year period, a compilation covering the literature of eight countries contains records of 31 proved malignant sarcomata of the uterus."

Four years later Kelly and Cullen, 1929, published another elaborate investigation. "Among over 1,400 myomata of the uterus there were 17 which they considered showing morphological evidence of being sarcomata. An analysis of these reports shows that there was proof of malignancy in but 7: *i.e.*, 2 recurred locally after hysterectomy; 3 showed apparent invasion of the neighboring tissues, and two had distant metastases. On the other hand, a few of the ten cases for which there exists nothing but

morphological evidence that they were sarcomata, have remained well several years after operation."

In 1920 the results at the Mayo Clinic were studied by Evans. He found that from 1906 to 1918 inclusive, a period of thirteen and a quarter years, there had been 4,000 operations for uterine fibromata. Seventy-two of these previously had been reported suspicious or malignant, but only eleven proved to be so, recurring locally and invading the peritoneal cavity. Using his criterion, only thirteen were histologically malignant. This gives us a figure of 0.39 per cent of all fibroids removed by operation in this series which were malignant. This corresponds very closely to the figure 0.5 per cent obtained by Kelly and Cullen of proved malignant neoplasms among the fibromyomata.

A few years ago it was common practice for pathologists and gynecologists to examine series of fibromyomata removed at operation for evidence of sarcomatous degeneration and the results were startling. Warner, in 1917, and Miller in 1913, found that about 2 per cent of all myomatous uteri showed sarcoma. Geist, in 1914, while examining 250 myomata, found that 4.8 per cent of them showed sarcomatous change. Spencer, discussing a presentation of 2 cases of sarcoma of the uterus by Andrews, 1921, stated that he had found sarcoma in 6 per cent of all cases of myoma, and that Bumm put the figure as high as 12 per cent. Because of this he now did total hysterectomy for myomata. All of these reports are based upon morphological changes and only in a few cases has any apparent attempt been made to discover what happened to the patient after she left the hospital.

If the observations of these writers are correct, a considerable number of women who have retained myomatous uteri are afflicted with sarcoma of the uterus. If this is a malignant neoplasm, we should be able to find autopsy records of such cases. In Bellevue Hospital, New York City, there are none recorded among the autopsy protocols, while there are only three cases at Presbyterian Hospital, New York City. At Boston City Hospital in 1917 there was recorded only one case, which was studied

by Gardner. He noted that of 827 myomas examined at the hospital, twenty-four were histologically malignant, but this was the only one in which the growth had metastasized. It may be argued that hysterectomy has cured many of these women, but if this is true, why have we such a dearth of autopsy records of women dying of sarcoma of the uterus in the days before hysterectomy for fibroma became such a common practice?

Corscaden and Stout's conclusions are: "One cannot escape the impression that, although an appreciable number of uteri may be found in which histological changes have occurred, exactly similar to or closely resembling the changes found in proved malignant neoplasms arising in fibromyomata, only a small proportion of these are actually malignant themselves. One cannot say what the proportion of malignant neoplasms among histological sarcomata of the uterus is, because seemingly no one has seen enough cases and allowed them sufficient length of time. Our impression is that the figures of Evans are very close to the truth and that only about two-fifths of one per cent of all fibromata are malignant."

The reason for these divergent opinions, of course, is not hard to find. The difficulty lies in determining exactly when malignancy has developed from the cell morphology alone. Ewing in his textbook makes the simple statement that diagnosis is difficult; so, with the number somewhere about 0.5 per cent of the observed cases, and the statement of Ewing that 50 per cent of all women over fifty years of age have these tumors, the facts bear out our experience that clinical sarcoma of the uterus is a rare disease. Nevertheless, it should be considered, and a rapidly growing tumor should be viewed with suspicion, but sarcoma of the uterus is not an indication for the use of surgery in uterine fibroid tumors.

Even granting that a proportion of cases are morphologically malignant, the type of x-ray therapy we use will be an added security. The patient will have had a course of pre-operative treatment, a procedure which is becoming more common, and which, we believe, will soon be routine in all malignant cases.

Another frequently mentioned contra-



indication is carcinoma of the body of the uterus. If the observation made by many writers that myoma occurs in 20 to 50 per cent of all women, the coincidence of the two conditions will of course be striking. However, we feel that careful diagnosis including curettage will exclude most of these cases, and a careful follow-up and knowledge of the subsequent course of a case after radiation therapy will eliminate most of the danger the patient might have from this source. If the patient is bleeding profusely, as many of them are, the radiation will control the hemorrhage so that the general condition of the patient improves. If surgery is necessary, the radiation given will form a valuable preoperative treatment.

Pelvic inflammatory disease was long considered a definite contraindication. Of late years, however, voluminous literature concerning the treatment of inflammation with x-ray has appeared. Tamdarow, in an article on "The Treatment of Fibroid Tumors" in *StrahlenTherapie*, gives pelvic inflammatory disease as one of the indications and says this condition disappears along with the tumor. Other European authors mention it and Desjardins, in *The Journal of the American Medical Association*, 1931, reviews the entire subject of x-ray treatment of inflammation. He refers to Gambarow, who treated 123 cases of adnexial disease with good results. Desjardins admits he is not sure of the mode of action of x-ray, but thinks it is on the lymphocytic infiltration. He adds that, after careful observation, he has never seen an inflammatory case made worse by treatment.

This has been our experience with cases of chronic pelvic inflammatory disease. It is our opinion that part of the good effects of radiation are due to a gradual reduction of the blood supply, both from the direct effect upon the infected tissue and from the results of the effect upon the ovary. That chronic pelvic inflammatory disease reacts favorably is particularly important, because it is in these chronically infected, adherent cases that most postoperative surgical accidents occur. The above does not apply to the use of radium. Radium is contraindicated, because of the intense local reaction it causes. No such reaction follows x-ray.

FEBRUARY, 1938

In all discussions the size of the tumor is mentioned as a further contraindication. Our experience has been, and we are sure that it has been the experience of all radiologists, that large size is no contraindication, for many times large tumors respond better than the small, dense variety. If the tumor contains calcified areas, these areas may be demonstrated roentgenologically before treatment, and in this instance surgery will be necessary, but in the greater number of cases this contraindication will not be present. Therefore, size has been disregarded by most men who treat these cases with satisfactory results. There is, however, a type of tumor, the large, slow-growing, irregularly nodular tumor, which reacts very slowly to x-ray. Usually cases of this type, which we have seen, have been associated with definite systemic disease, increased blood pressure, heart disease, or hyperthyroidism, and consequently the surgeon has hesitated to perform the grave, surgical manipulations necessary for its removal. As a result we have been called upon to treat a number of such cases. Some are accompanied by bleeding. The effects upon the bleeding have been excellent, but the tumors themselves have been slow to respond, and although we have followed a number of them over a period of years, we have yet to find one tumor that has entirely disappeared. Many have been reduced in size to a point where the patient is comfortable and the remaining tumor has no clinical significance. In our opinion this type of tumor (when it can be operated upon without too much risk) should be treated surgically.

This paper has been based entirely upon the use of x-ray in the treatment of these conditions. Radium, which produces excellent results in some cases, is definitely contraindicated when pelvic inflammatory disease is present due to its intense local reaction. In large tumors radium is likewise contraindicated, because anyone familiar with the physics of radium will readily see that little effect can be produced on the tumor itself, because radiation from radium is a form of light which varies inversely as the square of the distance, to which must be added tissue absorption.

The type of radiation used in these cases is a single series of 200 K. V. x-ray. It is

a rare occasion when we have had to repeat the treatment. It causes little or no effect upon the skin. In some cases the pubic hair disappears, but soon returns. The fields are so distributed that the radiation includes the entire pelvis. Many times we have heard it said that it is absolutely necessary to use radium for a quick cessation of the bleeding. We do not believe this, for we have seen patients with severe hemorrhage and marked anemia, cease to bleed following the application of one single dose of this type of roentgen-ray therapy. Following the above series of treatments, the patient may menstruate once at the normal time and there may be a small amount of bleeding at the second period. It is unusual to have more than this. If more bleeding occurs, immediate exhaustive search for other causative factors should be instituted.

Our results have been extremely favorable. The profession has been so impressed, that in our series 20 per cent of the cases are wives or close relatives of physicians. This treatment can be carried on frequently in an ambulatory manner. It requires no hospitalization unless the previous condition of the patient demands it. Excessive bleeding is usually controlled within a few days and the patient begins to gain strength. The percentage of disappearance of the tumors has been very high. It is, however, unreasonable to expect a tumor of large size or of marked consistency to disappear within a few days or weeks.

There is almost immediate cessation of the symptoms, but the tumor itself may remain for six to nine months before it entirely disappears. Occasionally, a tumor, not very large, nor of markedly hard consistency, will not totally disappear, but the patient's symptoms are alleviated and she is no worse than the thousands of women with small fibroid tumors who have never known the presence of the tumor. Careful follow-up of these cases must be the rule. Continuation of a discharge from inside the uterus, or return of bleeding, are serious symptoms, and if subsequent examination reveals that surgery is needed, the patient will be in better general condition to stand the operative procedure.

Let us summarize briefly the principal conclusions concerning the use of x-ray therapy in uterine bleeding, which we have attempted to elucidate by stating that:

1. Surgical results are good.
2. X-ray produces equally good results with less disturbance of the normal physiology.
3. X-ray therapy carries no mortality.
4. Many of the contraindications found in literature are not borne out by clinical experience.
5. Careful diagnosis is necessary.
6. This discussion applies only to the use of x-ray and not to radium.
7. The patients must approximate the age of the normal menopause.

#### **Picrotoxin in Treatment of Barbiturate Poisoning: Report of Case**

Edward M. Kline, Edward Bigg and H. A. K. Whitney, Ann Arbor, Mich. (*Journal A. M. A.*, July 31, 1937), before evaluating the therapeutic response to picrotoxin in their case of barbiturate poisoning, consider (1) the degree of poisoning, (2) the part played by the several other therapeutic measures and (3) the probabilities of recovery had not picrotoxin been employed. The 3 gm. of amytal ingested by the patient is, according to Sollmann, within the fatal dose range. He considers from 2 to 3 gm. as the amount usually fatal for man. This fact, coupled with the clinical picture of low blood pressure and absence of all reflexes, indicates that poisoning was severe. When many therapeutic measures are carried out concomitantly it is difficult to evaluate the effectiveness of any one. Other than picrotoxin, the significant procedures employed were strychnine,

gastric lavage and intravenous dextrose. Shock and prevention of dehydration were their indications for the administration of intravenous fluids. This, they feel, is an essential principle in the management of all poisonings. Some workers are of the opinion that intravenous fluids are of value as a vehicle in hastening the excretion of barbituric acid, while others maintain that its efficacy lies solely in its supportive nature. The importance of picrotoxin in the treatment of this patient must be weighed carefully, as recoveries do occur in severe cases when nothing more than general supportive measures are employed. Although it is impossible to conclude that the use of picrotoxin was a life-saving measure, the authors definitely feel that the recovery time was shortened. It should be emphasized that the use of picrotoxin is still in the experimental stage and that universal use must await further reports of its clinical application.

## CEREBRAL INJURY IN THE NEWBORN DUE TO ANOXIA AT BIRTH

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Kronig and Gaus, of Freiburg, Germany, nearly twenty-five years ago, introduced obstetrical analgesia into medical practice. It was immediately acclaimed by the profession in the world at large as a great humane advance in treating a very painful and exhausting ordeal. The method was soon given practical use in this country, but after a short and somewhat disastrous trial was largely abandoned. The danger to which the parturient mother and newborn child were subjected quickly became evident. Infant mortality increased at birth and more deeply narcotized mothers required instrumental delivery. The employment of obstetrical drug analgesia and amnesia quickly fell into disuse and disrepute because no scientific attempt was made at this early period in this country to study the basal metabolism, body weight and all other vital physiological factors entering into the final stages of labor.

The logical result of the crude and somewhat startling procedure of administering large doses of scopolamine and other powerful narcotic drugs to the woman in labor, whether she was in a hospital or about to be delivered in her own home, was to invite disaster. It is obvious, in the light of our present knowledge, that certain serious accidents were inevitable in the face of this unrestricted and unscientific practice. During the past few years there seems to be a re-awakening of the implications of so-called "painless childbirth." The publications of obstetricians and the laity have appeared with increasing frequency and have stressed the subject of dosage and the propriety of certain drugs employed to induce analgesia and amnesia in the expectant mother. The dangers to the newborn babe are considered and excellent articles explaining methods and apparatus for infant resuscitation at birth are offered, with, however, no adequate treatment of the subject of over-narcotization of the mother prior to delivery.

It is fundamentally important to deal with every woman in labor as an individual case in the same considered fashion that one proceeds with any serious operation. The complacent and uncritical use of any routine analgesic medication is bound to be fraught with danger, since the drug dosages employed are often beyond the range

of recognized pharmacological safety. We are convinced that this statement is substantiated by the startling lack of fundamental knowledge of the pharmacologic and experimental therapeutic action and dosage of those drugs which are so extensively employed in obstetrical work. When death of the newborn occurs, the cause is usually ascribed to asphyxia, pulmonary atelectasis and intracranial hemorrhage, although complete autopsy proof from examination of the whole body, including the brain, is often lacking. It is obvious that no cause of death is correct unless the proof is the result of a thorough investigation of the whole body of the infant, including microscopic tissue studies of the central nervous system by a competent neuropathologist.

Although the narcotic drugs employed in obstetrical practice are administered to the mother, they are capable of affecting the tissues of the child as well as those of the mother. The respiratory center is composed of highly sensitive nuclei. The effect of the narcotic drugs used is to depress the respiratory center and, if the depression reaches sufficient intensity, breathing ceases and a state of asphyxia ensues. To this state Barcroft has applied the term "Cerebral Anoxia."<sup>1</sup> "Nervous tissue is more sensitive to deprivation of oxygen than is any other tissue. Anoxemia of mild degree impairs its coördination. Even a short duration of asphyxia abolishes its functional activity. Complete anoxemia maintained even for ten minutes, or less acute for a longer time, may lead to irreparable damage to the nervous system."<sup>5</sup>

It is quite the habit in obstetrical practice to conduct a woman through labor



without pain or memory of the event. Subject to reasonable restrictions this is a commendable and scientific practice. We are not attacking pain reduction in childbirth, with the fortunate amnesia which is often concurrent, but we are proposing to show, by the clinical observations of one of us (Frederic Schreiber), that the use of strong narcotic agents may be associated with permanent brain changes in the living child.

Experimental evidence is not lacking to prove that cerebral asphyxia can result from insufficient oxygen content in the inspired atmosphere,<sup>5</sup> or after severe injury of the respiratory center in the medulla, from over narcotization of the patient.<sup>9</sup> When large doses of narcotic drugs are administered to a woman in labor over a short period of time, with the cumulative effect which is inevitable, the placental circulation carries these noxious agents into the central nervous system of the infant. The clinical evidence of asphyxia in the baby following delivery of a narcotized mother is well known. If the oxygen deprivation (cerebral anoxia) is of sufficient duration, irreparable brain damage results. The final clinical proof must come from a study of the neurological material under the microscope or the cerebral syndrome which develops within the first years of life, in which case the record affords conclusive evidence of narcotization at birth.

In the past five years we have had the opportunity to observe some three hundred cases which were diagnosed as "birth injuries," approximately half being seen because of convulsions, a fourth because of spasticity and the rest because of mental retardation. No matter what the history of the delivery in these cases—whether breech, precipitate or premature; spontaneous or with interference; with or without analgesia—the majority had one feature in common: a history of *respiratory embarrassment at birth as evidenced by difficulty in breathing, cyanosis or the necessity for resuscitation*.

It has long been known clinically that if the human organism is placed in an atmosphere deficient in oxygen for a sufficient length of time there may develop neurological symptoms pointing to permanent cerebral damage. In recent years two independ-

ent monographs have convincingly demonstrated the microscopic lesions produced in the human and animal brain following a sufficient exposure to a decreased oxygen supply. Yant<sup>10</sup> and his coworkers have demonstrated the definite cerebral lesions in animals exposed to oxygen deficient atmospheres. Courville,<sup>2</sup> approaching the problem from a different angle, demonstrates similar "devastation areas" or areas of patchy necrosis in cases where death has been delayed for some time following asphyxia. In cases of death from cerebral anoxia the early brain findings are those of stasis, thrombosis, perivascular edema and perivascular hemorrhage. If sufficient time for repair has taken place before death, the gross and microscopic findings are those of gliosis and atrophy.

The entire oxygen supply to the fetus is dependent on the mother and any oxygen deficiency to which the mother is exposed is registered in the highly sensitive vital centers of the fetus. Shutting off the necessary oxygen to the fetus is as disastrous as interfering with the air line of a deep sea diver. Whether the oxygen supply to the brain is shut off by mechanical pressure, by the thrombosis of a vessel, by actual oxygen deprivation or by a depression of the respiratory center, the ultimate cerebral damage must necessarily be the same.

As with any medical problem, in dealing with those cases diagnosed as "birth injuries," it is important to examine the past record which may possibly throw some light on the etiology. In reviewing the birth records in cases of "birth injury" seen by one of us and delivered in the past five years by two groups with which we have been associated, it was evident that almost without exception heavy analgesia had been employed in every case which came to us later, in spite of the fact that the use of deep analgesia during this period was not general in these groups. In all cases under consideration, the outlook for spontaneous delivery was regarded as normal at the onset of labor.

The principal drugs employed were morphine, scopolamine and barbituric acid derivatives such as sodium amytal, pentobarbital sodium, nembutal and dial, or combinations of these. There appeared to be gener-

ally routine doses. Scopolamine was used in this limited number of cases in much the same manner as in a series of almost five hundred consecutive cases reported in THE JOURNAL of the Michigan State Medical Society in October, 1933, from which we quote:

"The average dose of scopolamine was five 1/100 gr. The smallest dosage given which resulted in complete amnesia was two 1/100 gr. and the largest dose used in this series was twenty-one 1/100 gr. The twenty-one doses were used in a patient kept under scopolamine forty hours. She entered the hospital in labor Saturday and was delivered Monday. When she awoke she had lost a whole day."

The routine initial dose of the barbiturates appeared to be nembutal, grs. VI, plus gr. 1/100 of scopolamine. Although the toxicity of nembutal, grs. VI, equals that of sodium amytal, grs. XII, the latter drug was usually given only in IX grain doses.

Because the first toxic effect of both scopolamine and the barbiturates is to depress the respiratory center, the pharmacologist gives as the safe adult dose one much smaller than employed in obstetrical practice. Quoting from the latest 1937 edition of Sollman's pharmacology, the dose of scopolamine is given as 1/150 to 1/200 grain, "which may be cautiously repeated in six to eight hours." The author then goes on to warn of the danger of respiratory depression with small doses in individuals with special sensitivity to the drug. The pharmacologist also warns us that the first toxic effect of the barbiturate group is to depress the respiratory center. Sir William Willcox, in an article on the barbitone group in the *British Medical Journal*, March 10, 1934, states: "I have seen prolonged coma, suppression of urine and bronchopneumonia follow a normal dose by mouth of three grains of nembutal."

The clinical evidence that there may be depression of the respiratory center with the scopolamine or barbiturates used at birth is the more frequent need for resuscitation in the drug-born infant as compared with the undrugged infant.<sup>6</sup> Regardless of the specific drug employed to produce analgesia, it is the cerebral anoxia due to a drug depressed respiratory center which, in our

opinion, can reasonably be assumed to be the cause of disaster in some cases. It is, of course, obvious that every mother and infant do not show appreciable brain damage as a result of the large doses of analgesic drugs employed at birth. There are *certain variable factors*, however, which we believe may be responsible for the cerebral damage in some of the cases coming to our attention. We will discuss these under three theoretical heads: (1) metabolic anoxia; (2) anemic anoxia; (3) drug anoxia.

### Metabolic Anoxia

In this group there is an increased oxygen demand by the body tissues which cannot be adequately met owing to a depressed respiratory center. It has been found that for each degree of rise in body temperature there is more than a seven per cent increase in oxygen demand.<sup>3</sup> If for any reason the patient's temperature is elevated during delivery the oxygen demand is proportionately increased. Another reason for increased metabolism during labor is due to the increased muscular activity in the second stage. Knipping and Theodor<sup>7</sup> reported metabolic increases in the second stage up to 75 per cent. With the respiratory center depressed by drugs it is conceivable that the increased oxygen demand of the tissues cannot be satisfied by the available oxygen in circulation and asphyxial cerebral changes with subsequent brain necrosis may ensue. If the degree of cerebral asphyxia is severe enough at the time of birth the fetus may be stillborn. The following case is presented because of the autopsy findings.

*Case 1.*—A primipara, aged thirty-eight, was admitted in labor with a temperature 99° on admission.

The *Analgesia record* was as follows:

<b>A.M.</b>		
3:05	pulse 88	Scopolamine, gr. 1/100 Nembutal, grs. VI
3:30	pulse 92	
3:45		Scopolamine, gr. 1/100
4:15	pulse 116	Scopolamine, gr. 1/100
5:00	pulse 136	
5:15	pulse 156	
6:30	temperature 99°; pulse 128	
8:00	temperature 97.4°; pulse 100	Scopolamine, gr. 1/100
9:25		Scopolamine, gr. 1/200
10:20	the patient was conducted to birth room, where she was given nitrous oxide-oxygen-ether anesthesia.	

The baby was born dead. The fetal heart was normal at 9:00 a. m. The immediate postpartum (maternal) temperature was 103°, gradually returned to normal in seventeen days.

Autopsy of the brain showed a gross hyperemia. Dr. Louise Eisenhardt, the neuropathologist, after

# CEREBRAL INJURY IN THE NEWBORN—SCHREIBER AND GATES

preparing this tissue with special stains, reported: "The microscopical picture is typical of that described in cases of anoxemia, that is, a marked ischemic necrobiosis and extensive demyelination."

*Comment:* The difference between a living and a dead baby in this case is only chronological, since if the baby had survived it would, no doubt, have shown evidence of cerebral damage.

*Case 2.*—Multipara, aged forty, had an imbecile child seen at twenty-two months of age.

## *Analgesia Record*

<b>P.M.</b>	
5:00 temperature 97.8°	Sodium allurate, grs. 10-1/2
	Scopolamine, gr. 1/100
5:30	Scopolamine, gr. 1/100
6:00	Scopolamine, gr. 1/100
9:07	Thymophysine, 1/2 c.c.
10:00	Scopolamine, gr. 1/100
11:25	Morphine, gr. 1/8
<b>A.M.</b>	Scopolamine, gr. 1/100
12:20	nitrous oxide-oxygen anesthesia was used.
12:55	the baby was born with asphyxia pallida. The resuscitation was difficult.

The immediate postpartum temperature of the baby was 102°, which rose to 104° at 8:00 a. m. and gradually returned to normal on the third day. The maternal postpartum temperature ranged to 102° over a number of days.

*Comment:* In both the foregoing cases there was a temperature rise noted before or immediately after delivery, which indicated an increased oxygen demand. It is well known that one of the first signs of serious cerebral anoxia is a rapid rise in temperature which accompanies cell necrosis.<sup>10</sup> A vicious circle may thus be set up with the tissues crying out vainly for more oxygen, being spurred on by a disorganized temperature center while the drugged respiratory center fails to meet the emergency.

Extrinsic temperatures may also have a part in the production of metabolic anoxia. On an unusually hot day in July, 1936, when the temperature reached 100°, several mothers and infants perished during labor with deep analgesia. One such case is recorded here with the suggestion that the unusual demand for oxygen due to the temperature rise from external heat could not be met by a drug depressed respiratory center.

*Case 3.*—Primipara, aged 26 years, was admitted in labor. Fetal heart heard in right lower quadrant. Temperature on admission 99.4°. Pulse 104; respirations 24.

## *Analgesia Record*

<b>P.M.</b>	
3:10	Sodium amytal, grs. IX
	Scopolamine, gr. 1/150
4:25	Scopolamine, gr. 1/150
8:00 pulse 108	Scopolamine, gr. 1/150
9:40 temperature 104.4°	Pituitrin, min. III.

At ten o'clock p.m., the patient was transferred to the delivery room when her pulse was 140. She

was given nitrous oxide-oxygen-ether anesthesia when an easy breech extraction was performed. The baby was stillborn.

The temperature taken in the axilla immediately following delivery 108.8°. Pulse 160. The patient remained unconscious with a terminal temperature of 105° until death ten hours after delivery.

## **Anemic Anoxia**

In this group, the number of red blood corpuscles being depleted, there is a lack of oxygen and carbon dioxide carriers to the brain. The respiratory depression and blood stasis produced by analgesic drugs further deprive these carriers of the necessary oxygen, with resultant cerebral degeneration. An anemic mother may be a definite analgesic risk and it is possible that more "birth injuries" than we now appreciate are born of such narcotized anemic mothers, since anemias of pregnancy are not uncommon.

*Case 4.*—The patient, a primipara, aged thirty, was first observed in January: 40 per cent hemoglobin; 1,700,000 red blood cells. She was seven months pregnant when a transfusion of 500 c.c. was given. The fetal heart was normal. In February she was estimated eight months pregnant: the blood pressure, systolic 138, and diastolic 80; fifty-five per cent hemoglobin; 2,430,000 red blood cells. Medical induction was as follows: castor oil and quinine, Thymophysine, four minims every fifteen minutes for five doses.

<b>P.M.</b>	
10:24	Surgical induction. Membranes ruptured
<b>A.M.</b>	
2:15 pulse 68	Sodium amytal, grs. VI
	Scopolamine, gr. 1/100
	Scopolamine, gr. 1/200
3:15	
4:00 fetal heart normal	
4:15 pulse 140	
4:30 fetal heart normal	

At 4:55 a. m., she was taken to the birth room and given 500 c.c. of 10 per cent glucose and 350 c.c. whole blood. The delivery was by low forceps and nitrous oxide-oxygen-ether anesthesia. The baby was born dead and showed asphyxia pallida. At 4:00 p. m., the temperature was 100.3°, the pulse 100, and the respirations 24. One month after the delivery, the hemoglobin was 45 per cent and there were 2,290,000 red blood cells.

*Comment.*—Although the greatest care was taken to insure a living baby in this desperate situation, the depressing effect of the analgesia employed may have been enough to tip the scales adversely. There was probably very little leeway between a living and a dead baby in this instance.

*Case 5.*—A boy, aged three and a half years, with spastic paraplegia and mental retardation. Encephalograms show a generalized atrophy. The following admission note was taken from the child's chart: "Mother not well since birth of child, very nervous, cries on slightest provocation, nightmares." The analgesia record is as follows: The mother was a primipara, aged 21 years. The temperature was normal, the pulse 90 and respirations 24 per minute.



# CEREBRAL INJURY IN THE NEWBORN—SCHREIBER AND GATES

A.M.  
4:15 Hysocine, gr. 1/100  
4:45 Hysocine, gr. 1/100  
5:15 Hysocine, gr. 1/100  
7:15 pulse 118  
8:00 temperature 99°; pulse 132; respirations 24  
9:25 Hysocine, gr. 1/100  
11:25 pulse 130 Hysocine, gr. 1/100  
1:25 Hysocine, gr. 1/100  
2:00 pulse 140; respirations 24  
5:35 Morphine sulph. gr. 1/4

There was an easy forceps delivery under ether anesthesia. The baby was resuscitated with carbon dioxide-oxygen. One month later, the mother showed hemoglobin sixty-two per cent, red blood cells 3,420,000, and white blood cells 4,300.

*Comment.*—No blood count was taken in this case until an anemia was suspected almost a month postpartum. It is conceivable that such an anemia existed at the time of analgesic delivery, with a resulting anemic anoxia.

## Drug Anoxia

Idiosyncrasies for the barbiturates and scopolamine have been described and are not uncommon. Toxic effects have been noted from much smaller doses than those employed in producing birth analgesia.<sup>11</sup> Some such cases probably belong in this group. However, we include under this heading also those cases in which there is evidently no meeting of the minds between the obstetrician and the pharmacologist.

*Case 6.*—Infant aged three days. Generalized twitchings.

### Analgesia Record of Mother

On admission mother's temperature was 98.4°; pulse 80; respirations 22.

P.M.  
8:10 Scopolamine, gr. 1/100  
8:40 Scopolamine, gr. 1/100  
9:10 Scopolamine, gr. 1/100  
11:10 Scopolamine, gr. 1/100  
A.M.  
2:20 Scopolamine, gr. 1/100  
4:00 Scopolamine, gr. 1/100  
6:00 Scopolamine, gr. 1/100  
8:00 Scopolamine, gr. 1/100  
10:00 Scopolamine, gr. 1/100  
12:00 Scopolamine, gr. 1/100  
P.M.  
2:00 Scopolamine, gr. 1/100  
3:52 Ether anesthesia. Low forceps.

Weak cry. Immediate maternal postpartum temperature 100.8°.

## Effect on the Mother

The mother, as well as the child, may show evidence of brain damage associated with birth analgesia, both being equally exposed to cerebral anoxia if present. In one of the preceding cases the mother of the damaged infant began to have nightmares and crying spells, which continued for years after delivery. Psychiatrists have pointed out the increase in postpartum psychoses in recent years. In one series this marked in-

crease is attributed to the recent financial depression, but we would suspect respiratory depression may also be involved. In the following case the mother gives a history indicating organic brain change following delivery with sufficient analgesia to produce a blue baby.

*Case 7.*—Primipara, aged 26. The patient complains of frequent grand mal seizures since the birth of the baby. She had no previous seizures.

### Analgesia Record

A.M.  
9:45 Scopolamine, gr. 1/100  
10:15 Scopolamine, gr. 1/100  
10:45 Scopolamine, gr. 1/100  
P.M.  
12:45 Scopolamine, gr. 1/100  
2:45 Scopolamine, gr. 1/100  
5:03 The baby was delivered with low forceps. Ether.

The blue baby was resuscitated with oxygen by catheter.

## Encephalography in Cases of Suspected Analgesic Birth Injury

Encephalography has been employed in a considerable number of the cases in this series of "birth injuries" associated with deep analgesia. Brain atrophy, either generalized or unilateral, is a frequent finding. Such a generalized atrophy is shown in Figure 1 from a case of idiocy in which analgesia and forceps were employed.

The *analgesic record* of the mother follows:

A.M.  
11:00 Nembutal, grs. III  
2:00 Nembutal, grs. 1-1/2  
3:30 Morphine, gr. 1/6  
5:00 Nembutal, grs. 1-1/2  
5:40 Morphine, gr. 1/6  
8:38 Ether. Forceps delivery.

The baby was born cyanotic.

Figure 2 illustrates a unilateral atrophy in a child with right-sided spasticity. The appearance is that produced by a thrombosis of a cerebral vessel, the stage being set for such an accident by the cerebrovascular stasis and anoxia secondary to respiratory depression.

The *analgesia record* of the primiparous mother was as follows:

A.M.  
12:25 Sodium amytal, grs. IX  
Scopolamine, gr. 1/100  
1:15 Scopolamine, gr. 1/100  
1:50 Morphine, gr. 1/4  
Scopolamine, gr. 1/100  
5:00 Scopolamine, gr. 1/100  
7:55 Scopolamine, gr. 1/100  
8:14 Thymophysine, 1/2 c.c.  
9:00 Nitrous oxide-oxygen-ether anesthesia. Easy forceps delivery.

The question of analgesia cannot be separated from the question of interference; the two go hand in hand. Although forceps

were necessary in almost every case in this series of damaged babies born with deep analgesia, the instrumental delivery was not thought difficult at the time. The adjectives,

these cases of birth injury are scattered among the orthopedists, neurologists, ophthalmologists, otologists, psychiatrists, speech experts and others, with the result

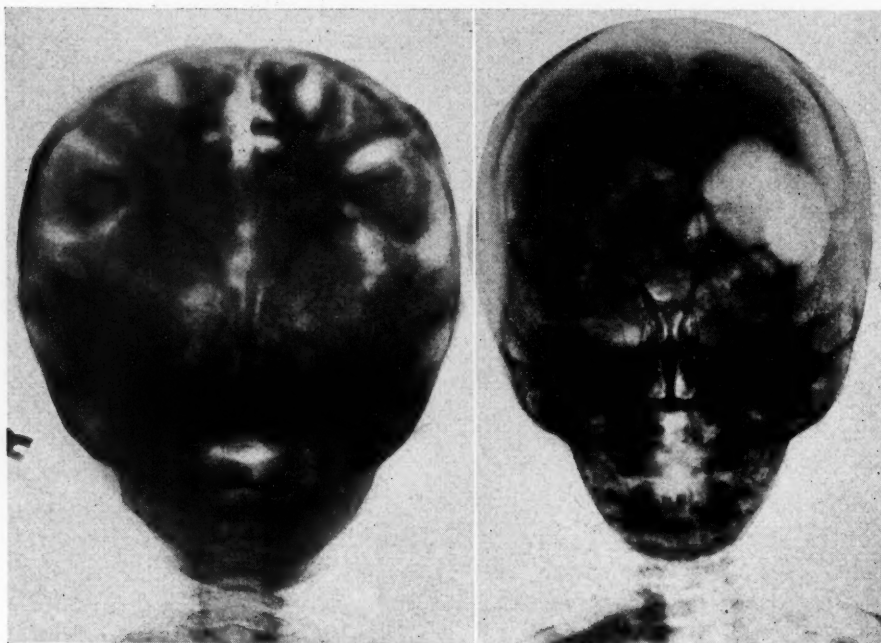


Fig. 1 (left). Antero-posterior encephalogram showing generalized encephalopathy.  
Fig. 2 (right). Encephalogram showing unilateral encephalopathy.

low, easy, academic and prophylactic, are used in describing the procedures. We have always felt that the relatively rapid molding of the head with forceps delivery or version simulated the hazards of the precipitate delivery, but that is aside from the subject of this paper. Today an interference rate of 70 to 80 per cent is acceptable in local obstetrical practice. These figures are given merely to show the increase in interference which analgesia as employed today has brought about. If painless delivery is possible with no danger to mother or child, it would be, of course, the method of choice. However, if there are dangers in such methods of analgesia plus interference, we believe the mother should be warned so that she may share the responsibility with her obstetrician when she demands a painless delivery.

The cases studied in our series of birth injuries were those desperate cases which come to the attention of the neurological surgeon. That lesser brain damage may result from cerebral anoxia at birth is probable. The newborn infant is handed over to the pediatricist, who in turn sends the baby to various specialists if the child develops mental or motor abnormalities. In this way

that the full extent of the problem is not apparent in any one medical specialty. In conclusion, even if an infant's brain were only damaged to the extent of producing a "problem child," as a result of cerebral anoxia secondary to birth analgesia, we believe the drug hazard to be sufficiently grave to warrant critical scrutiny.

#### Summary

1. Cerebral anoxia at birth with resulting permanent brain damage is proposed as an etiological factor in cases diagnosed as "birth injuries" of the brain.
2. The use of analgesic drugs employed in labor is discussed in relation to *metabolic anoxia*, *anemic anoxia* and *drug anoxia*.

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## PROBLEMS OF THE NEWER OBSTETRICS\*

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In discussing the problems of the "Newer Obstetrics" we do not intend to take a one-sided stand for or against either the conservative or the active school of obstetric practice. We simply wish to point out that in the evolution of obstetric practice certain new problems have been created which will require solution before the value of the newer obstetrics can be definitely accepted.

Obstetrics is by heritage conservative. Obstetrics is traditionally conservative. Labor and delivery have long been looked upon as physiologic processes, and in most cases are safe when allowed to follow an unmolested normal course. In accepting this viewpoint it meant that usually the attendant was necessary mainly to give moral and psychic support, and his chief function was to recognize complications, and to repair and lessen the damage that occurred in this normal physiologic process. The fact that most cases were normal led to this practice often being assumed by individuals who knew very little of what was happening during the process of labor. Thus midwives and untrained attendants from time immemorial had engaged in this practice. And doubtless the reason why these untrained attendants seemed to successful was because nature was kind and usually performed routinely, and the attendants comforted the patient though often they themselves knew very little of what was happening. In all medical practice we often get praise when nature does a thing well, and as medical men we often accept this praise, unconsciously, perhaps, to offset the criticism we may receive in spite of occasionally doing a good piece of work. So midwives and untrained attendants often received credit beyond their deserts, simply because nature worked well. When a complication existed which no one recognized, it was just unfortunate for the patient. Medical literature shows that the science of obstetrics did not advance until medical men overcame the reluctance of society in having a male attendant present at delivery. This dates back to the seventeenth century. And we have no record of what happened prior to that. Although most women had delivered themselves normally and survived, we have no record of what happened to those who had abnormal conditions, and it is no doubt

safe to assume that of those who were unfortunate to have complications many succumbed without anyone knowing what was wrong. There is no doubt that there is need for a great deal of intelligence in the practice of obstetrics, even though the process of delivery is considered physiologic, and no branch of medicine requires more trained intelligence and judgment. Furthermore, in no branch of medicine can the results of improper judgment be more grave.

Medical men then have had a great influence on obstetric practice and have tried to study the process of labor and delivery, and as the study developed it became evident that certain deviations from the usual could occur, and these came to be recognized as complications and abnormalities.

The medical literature of the seventeenth century is full of interesting reports of what medical men observed and learned. Here we have the first observations on deformed pelves, placenta previas, abnormal presentations, with descriptions of internal podalic version, and maneuvers for the delivery of the after-coming head, and the introduction of the obstetric forceps. With the increasing interest of medical men we also see the beginning of lying-in hospitals. One could go on indefinitely into medical history if time permitted. Medical men have been students, they have been inquisitive, and resourceful, and they have shown a great deal of ingenuity in trying to correct abnormalities. For a couple of centuries after medical men began to practice obstetrics they continued the conservatism as practiced by early midwives. As medical knowledge of obstetrics advanced, this knowledge was applied mainly to correct and overcome abnormalities. The medical man's field was to observe, and assist na-

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ture. The midwife in the past had watched and waited in blissful ignorance as to whether conditions were normal or abnormal. The medical man adopted the policy of watchful waiting more fully awake to conditions, and confident, in most cases, as to what conditions were. But the physician assisted nature only when conditions were abnormal, and when prospect for a spontaneous ending was either long delayed or absolutely impossible.

This type of practice was quite standard and the rule until about two decades ago. It is true that certain men departed from this conservative practice and often hurried labor for their own convenience, at times attempting delivery even in spite of the difficulty of an incompletely dilated cervix. This type of practice has been dubbed as "meddlesome midwifery," and it is condemned by all conscientious men. This was the practice only of the unscrupulous who considered himself first and his patient last, or not at all.

During the past two or three decades there have been marked changes in obstetric practice. These changes are proposed not by unscrupulous and indifferent practitioners, but have been suggested by some of our leading obstetricians. They view labor not as a normal physiologic process, but rather as pathologic. They point out that the normal physiologic processes of the body are not associated with so much trouble or pain, and do not go awry so often. They feel that the idea of watchful expectancy has much in it to be criticized, and they point out that normal physiologic labor so-called can be productive of a great deal of harm to both mother and child. Also, it is pointed out that the pain of labor has a very nerve-racking effect on the patient, and a prolonged second stage may result in irreparable damage to both mother and child.

These men, then, leaders in obstetric circles, are suggesting that the trained obstetrician can do a great deal to prevent damage to both mother and child, and can do much to diminish the amount of pain and shorten the period of suffering. Let it be emphasized again that these proposals came from some of our leading obstetricians, and we must at least give them credit for being sincere and honest in their convictions. No matter what our attitude toward this newer

obstetrics we must admit that this is a sincere effort on the part of these leaders to attempt to solve the pain of labor and lessen the suffering.

The medical profession was rather startled in 1920, when DeLee wrote his initial paper on "Prophylactic Forceps." This term was applied to a group of procedures which included not only a forcep delivery when the head appeared on the perineum, but preceded this with the administration of some pain-relieving drug during the first stage of labor. Included with the actual delivery was the performing of an episiotomy, and an early removal of the placenta. In the opinion of men like DeLee this compound procedure not only lessened suffering, but prevented a great deal of drain on the patient's strength, and lessened the strain on the nervous system, and left the patient in so much better condition that her post-partum recovery was hastened and more complete.

In the original paper on "Prophylactic Forceps" it was definitely pointed out that this procedure was safe only in expert hands, and that unless one was well trained watchful expectancy would still be the safer method. This immediately created two types of obstetric practice, and that in itself is a great problem of great importance.

Who shall decide what type of obstetrics a medical man should practice? Shall a man grade himself and decide on his own expertness? Look in the directory of the American Medical Association and note how many men have listed themselves as obstetricians. When a student graduates from medical school his diploma may specifically mention that he is qualified to practice obstetrics. His state license to practice confers on him that same legal qualification. If he then has the legal right to practice obstetrics, who shall say as to what type of practice he shall follow, and what procedures he shall be allowed to perform. Let us remember that every physician is also licensed to practice surgery. We would not expect every physician to delve into major surgery simply because he has a legal license to do so. Only his own conscience can be his guide, and the developing of an obstetric conscience should be the most important part of a practitioners' equipment for the practice of obstetrics. Fortunate are the patients of a physician who knows

his limitations. The development of an obstetric conscience, and the recognition of one's limitations are important factors in the safe practice of obstetrics.

In examining the statistics of the newer obstetrics we must conclude there can be no criticism of the results obtained by men who prosposed these measures. They set out to relieve the suffering of labor, to shorten the period of suffering, and one must admit that they accomplished these aims with no added harm to either mother or child. But, on the other hand, we note the study of maternal mortalities made by the Academy of Medicine in the City of New York, and their direct conclusion is that the failure to reduce maternal mortalities has been due to the increasing amount of operative interference with normal labor. They conclude that the better results that might have been expected from improved facilities provided by Maternity Hospitals has been offset by the harm resulting from the increasing number of operative deliveries. One can only conclude that this is the result of having two standards of obstetric practice. The proponents of the newer obstetrics have shown how it can be done, but their procedures have been imitated by those less trained, and the result at large has been unsatisfactory.

This is the chief criticism that is heaped on the newer obstetrics. The general practitioner has always been, and doubtless always will be, the obstetrician for the masses. For every patient delivered by a trained expert, scores will be delivered by those less trained. The proponents of the newer obstetrics feel that the plane of obstetrics should not necessarily be kept down to the level of those less experienced. It is asked, "In what department of medicine is it not true that there is a great difference in results as to whether any procedure is performed by an expert or by one less trained? And the more major the procedure the greater difference will there be in the results. And what field of medicine and surgery would have made progress if all procedures were limited to those that the lesser trained could perform? And where would suffering humanity be if the dictum were made that no procedures should be attempted except what a lesser trained person could perform. Where then would

there be a place for ingenuity and skill in the practice of medicine?

If certain physicians develop a high degree of skill and can be of aid to suffering patients, without endangering the lives and health of mother and child, must they refrain from exercising this skill and offering this aid simply because some less trained person may attempt to imitate them? When this criticism is made, is it not viewing the problem from the wrong angle? Apply that same criticism to any field of medicine and what is the answer? Should not the responsibility be with the less trained? Should not he recognize his limitations and practice within these limits? And if he wishes to practice on a different plane, should he not qualify himself by the necessary period of training? Development of a conscience, and recognition of one's limitations, are requisite for safe practice in any field of medicine. The general practitioner will always be the obstetrician for the masses, and his results will always be satisfactory if he will adhere to the conservative principles taught in his medical school. He should have no quarrel with the expert who can practice a more radical obstetrics and still obtain good results. Obstetrics will always be the general practitioner's field as long as he retains his conservatism.

In reflecting on the changes that have occurred in obstetric practice, one realizes that slowly but surely obstetrics has changed. We may not like the change, but we cannot deny that there is a change. Even among those who are not devotees of the newer obstetrics, there has been a change of practice, a change of viewpoint. Often we find that certain men have their pet types of radicalism which they do not recognize as being radical. So it is evident that men may become radical along one phase of obstetric procedure without embracing all the ideas of the newer obstetrics. It is our purpose to review certain of these procedures.

One of the first types of active interference that became popular was the adoption of episiotomy in delivery of primipara. The reason for this, no doubt, was the unsatisfactory results often obtained from repair of lacerations. Nearly every one practicing obstetrics has been surprised at certain unsatisfactory results thus obtained. Different methods have been devised to prevent

lacerations, and often the physician would congratulate himself on delivering a patient apparently without laceration, only to be chagrined later to find how extensive the relaxation of the vaginal outlet could be in such a case. It became apparent that the delivery supposedly free from lacerations, was free only from visible lacerations. And from the resulting relaxation in some of these cases it was inferred that there had been muscle damage even though the mucosa had been left unlacerated. Naturally there was no way to determine such damage when the unbroken mucosa prevented visualization of the underlying muscle. The fact that results from lacerations (or from no lacerations) were so unsatisfactory led a great many practitioners to adopt episiotomy as a substitute. These men preferred a frank incision which was clean cut to either a ragged laceration, or an invisible laceration. This really was the application of surgical procedures to obstetrics. Many men soon found the results of episiotomy disappointing because they were not equipped to handle this like a surgical operation. But experience has shown that this is essential. It involves first of all a better preparation of the patient, in fact, a surgical preparation. Slipshod preparation is not adequate here. Second, it involves a surgical anesthetic. While a physician can often place a few sutures in a lacerated perineum without much anesthesia, it would be practically impossible to repair an episiotomy satisfactorily without an adequate anesthetic. A few drops of ether do not suffice here. Thirdly, a deliberate incision requires surgical asepsis for proper healing. This really means that episiotomy should be only a hospital procedure. The performing of an episiotomy outside of a hospital would necessitate a much better equipment than is usually available in a home delivery. These are some of the requisites for adoption of episiotomy in obstetric practice. A broken down episiotomy usually gives a worse result than a poorly healed laceration. Added to the above mentioned requisites is the fact that considerable surgical technic is involved in the repair of an episiotomy, and surely should not be undertaken by one unaccustomed to handling repair instruments, or by one who did not have a definite technic of repair in mind. Unless one has all these advantages at his

disposal, his results will be better if he allows his patients to deliver with laceration, and then repair as best as he can. The damage then, at least, will not be of his own making. Given good surgical conditions there is no doubt that the experienced operator can leave his patients in better condition by performing episiotomy than by allowing them to lacerate. Another feature not to be forgotten is that the performing of an episiotomy allows a shortening of the second stage and saves the fetal head from a great deal of possible trauma.

Another form of radicalism that has crept into obstetrics is the frequent induction of labor. The newest method for this is the artificial rupture of the amniotic sac. When for some indication induction is essential, rupture of the membranes is, in most cases, a simple and satisfactory method. The fear obstetricians formerly had concerning dry-labor was probably unwarranted. However, the attendant should realize that induction of labor is still something that requires great judgment. Its chief indication is in the toxemias when not to deliver the patient may be disastrous. One should always remember that the risk involved, although slight, is quite positive, and this risk should be undertaken only when a greater risk is thereby avoided. For this reason inductions for trivial reasons, inductions for convenience, should be considered with great reluctance. It requires real ability to diagnose the term of pregnancy, and one is greatly chagrined to induce labor for a supposedly overtime pregnancy, and then have a premature baby. And since such induction in cases of breech presentation is so disastrous for the fetus it presupposes the ability to make a correct diagnosis of presentation and position. Complications following induction of labor require a great deal of explanation, and the burden usually rests with the attendant. Induction of labor has a definite place in obstetric practice, but it is a procedure that should not be undertaken without definite indications. Judgment, based on experience, is essential in making this decision.

Still another radicalism of present-day obstetrics is the widening of indications for cesarean section. While this is at times justified, especially when the complication to be overcome is accompanied by very se-



rious possibilities, it must be remembered that cesarean section is not a simple cure-all. It is often stated that the more skilled the obstetrician, the less often need he resort to cesarean section. And in the hands of untrained men, a cesarean section may be more serious than the dangerous complication it is intended to avert. A lesson that the profession must still learn and comprehend more fully is that a cesarean section is a safe operation only if the patient is uncontaminated, and this refers not only to vaginal examinations, or attempts at vaginal delivery, but also has reference to the length of labor and the period of rupture of the membranes. And when one advises a cesarean section for a temporary indication it must be remembered that the cesarean section itself may then become a permanent indication. When one is told that cesarean section is so simple and safe an operation, let us remember that such operations cause a large percentage of the maternal mortalities in this country.

No doubt the most common type of radicalism that has crept into obstetrics is the increased percentage of interference with normal delivery. In fact, many men think only of this when radicalism is discussed. One cannot but feel that the advocates of the newer obstetrics should be credited with this dubious change. In former days the obstetric forceps was used only after conservatism had been exhausted. Formerly a forceps operation meant that in the opinion of the physician the labor could not be prolonged without harm to either mother or child. If delay for an hour would mean safe spontaneous delivery, then one just waited. But gradually the permissibility for use of forceps has been broadened, and now many a physician shortens labor when he feels the instrumental delivery will be an easy delivery. While it is true that in many cases the results seem as satisfactory as in spontaneous delivery, yet there are many cases on record where one can believe that conservatism would have been the safer plan. If these forceps operations were confined to those cases where the head was on the perineum and definitely crowning, the results might be quite satisfactory. But too often the physician is so emboldened by his success and the ease with which he can deliver these patients, that unconsciously he extends these operations to those cases

where the presenting part is not yet crowning. He is likely to forget what normal labor can accomplish and is likely to have the belief that these cases would never deliver if not aided. There is no doubt that the attendant's judgment becomes easily warped, and he forgets or is blinded to all he learned during his conservative practice. While many physicians with good facilities can perform these forceps deliveries with apparent safety, yet we must recall that in the study of maternal deaths made by the Academy of Medicine of New York, the conclusion was reached that the failure to reduce maternal mortalities was due to the fact that the better results that had been hoped for because of improved hospital conditions, had been offset by the harm caused by the increased number of operative deliveries. DeLee has called attention to the fact that results depend not so much on the forceps as it does on the man handling the forceps. Every physician should search his own mind and establish his own conscience. Every physician who practices obstetrics should develop a sensitive obstetric conscience, and should know his own limitations and should practice within these limitations. It would seem that the very fact that we have better hospital facilities has encouraged some physicians to be more radical. The protection of the hospital encourages them to attempt procedures they would not undertake in a home. If a hospital has this effect on a physician then it would be better for these patients to be delivered at home. It is this change in practice that has given rise to the viewpoint that patients can be more safely delivered at home than in the hospital. The only solution for this is the development of a keener and more sensitive obstetric conscience. In no field of medicine is this more important than in obstetrics. Faulty judgment may often be responsible for poor results. This can be pardoned if this judgment is arrived at after conscientious consideration, and the patient's welfare was the only consideration. To err is human and the physician is quite human.

We have heard much discussion about "meddlesome midwifery." This term seems to have a great many meanings. The term is intended to be derogatory and its chief application is to those attempts at delivery at a stage now universally recognized as

contraindicated. This, to put it plainly, refers to attempts at delivery before complete dilation of the cervix. It is strange that this type of obstetric practice still exists. It receives universal condemnation, but still persists. The only explanation can be the ignorance or the lack of conscience on the part of the practitioner. Fortunately, this is not a common practice, and physicians in general are quite unanimous in condemning it.

A great problem faces obstetricians in the efforts to lessen the pain of labor. This problem at present is undergoing a great deal of study and investigation, and all are agreed that it is not yet solved.

The suggestion of pain-relief during labor is greeted with antagonism from many quarters. For some reason or other even many physicians meet the suggestion with opposition. It is true that since the popularizing in lay magazines of the *Twilight Sleep* of Kronig and Gauss, popular demand has been created. Those who are antagonistic to pain relief in childbirth chide obstetricians for succumbing to lay demand and seeking to appease patients by relieving pain. This view of the situation is hardly correct for obstetricians of their own accord are interested in relieving pain of labor. Has not the medical profession, from time immemorial, tried to relieve human suffering? Has the medical profession evidenced signs of weakness just because they have in times past tried to relieve this suffering? After all is that not the chief aim of the profession?

A great many drugs have recently been developed to relieve the pain of the first stage of labor. These are too numerous to mention in this discussion. And it is safe to say that there is hardly a clinic or hospital where some clinical observation of this type is not being made, and each clinic is working out some method of pain-relief. The fact that such a variety of drugs are used is an evidence that no one drug is as yet greatly superior to others. The requisite for any drug is, of course, the fact that it must relieve the pain of labor with safety to mother and child. This is the problem that still confronts the medical profession. The drug that lessens pain must not interfere with progress of labor. Many of the drugs used at present while they produce a satisfactory analgesia and amnesia, cause

a great restlessness during labor. The handling of these patients is indeed a problem, and is a great tax on hospital attendants. This phase alone would preclude the use of these drugs in a home. There is no known way to enable one to anticipate which drug will cause this restlessness, or what patient will react thus. This restlessness may be so violent that an orderly aseptic delivery is almost out of the question, and about the only solution for this is a general anesthetic with the final delivery by a forceps operation. Not only is it often necessary to affect final delivery by forceps because of the restlessness, but the instrumental delivery becomes essential because in so many patients an inertia develops during the second stage. A great danger here is that the old abuse of pituitary extract may again be revived. In most hospitals the use of analgesic methods have been accompanied by an increased number of operative deliveries. This demands that the physician administering these pain relieving drugs must be equipped by training to accept this additional interference with safety. If these methods are employed it is evident that obstetrics will become more and more a major practice, and to practice this type of obstetrics with safety will require more and more training on the part of physicians. There is no doubt that in using analgesia to lessen pain of labor a serious new problem has been created, and it will require all the experience and best judgment of the practitioner to cope with the situations. At no time in the history of medicine was judgment more essential in the practice of obstetrics. Time only will disclose what the final solution will be.

An important phase of this application of analgesia to obstetrics is the effect on the baby. There is no doubt that the babies become partially narcotized, and as a result are slower to breathe, and require more efforts at resuscitation. The general feeling among obstetricians has been that once resuscitated, these babies were normal and pursued a normal course.

Our complacency in this matter was somewhat shaken by the opinion and work of Schreiber who concludes in his work as a brain surgeon that the baby's brain is damaged by the anoxia that occurs as a result of the drugs used. Obstetricians in general have not accepted these conclusions, but

Schreiber has at least called attention to a possible danger where obstetricians thought none existed. There is no doubt that when first used, these drugs were given in larger doses than necessary, and as dosage is reduced it is found that equally satisfactory analgesia can be obtained. Obstetricians feel that patients must not be informed that labor will be painless. Patients should understand that labor should progress up to a certain point before analgesia is given, and that relief may be given during the worst period of pain. In this way one dose of the analgesic drug is usually sufficient, and the baby will be less likely to show the effect of the drug used.

Obstetrics is at the cross-roads. Which direction will it take? The work in obstetrics is assuming more and more a major trend. Every new advance brings with it new problems. All advances are not unmixed blessings. These new problems require increasingly more skill in their solution, and the burden lies with the medical profession. To meet these new problems will test the judgment and skill of the practitioners, and this will require more and better training of all physicians. Only through better training can the new problems be met and solved.

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### LEGAL ASPECTS OF PSYCHIATRY\*

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It is of immediate importance to the sound development, both of law and psychiatry, that common ground be found where the members of both professions may meet, exchange knowledge and experience, and work out solutions for problems which are troubling the state and sorely vexing individuals, and for which neither profession has been able to offer anything but a half-way solution. In unison a complete remedy might be formulated; at least we may be sure that the most practicable program will be produced through concerted action. These two professions, both of whom can justify their existence only by real service for individual and public welfare, have been held apart by misunderstanding and distrust. Instead of cordial team-play, there has been a tendency to pull apart until the phrases "legal viewpoint" and "psychiatric viewpoint" have become nearly opposites. All this is unnecessary. A few rare spirits have soared above the fogs of argument and have seen the true objective.

The first step is to make medical men, especially those in the psychiatric field, fully conscious of the extent, limits, purpose, operation and crystallized experiences of our existing legal system, and to make lawyers fully aware of the content, scope and limitations of the psychiatric field.

Psychiatry is concerned with the developmental forces and processes and the clinical manifestations both of morbid inner experiences and of such outward behavior as interferes with one's social adjustments. Psychiatry is thus not confined to an inves-

tigation of disturbed brain physiology or of psychological processes arbitrarily removed from the real unity of experience of the individual, but is primarily concerned with the behavior of the human organism as a unitary system engaged in adjustment to its environment, between both of which there is a dynamic interplay. From this point of view, one sees that psychiatry is fundamentally a branch of biology. To the psychiatrist both mind and body are but abstractions, the concrete fact being the living organism. The behavior of the organism cannot be explained as the algebraic sum of the functions of the component organism, but we consider the human personality as a unity which includes both organism and the interplay with the environment. So much for the definition as to the concept of psychiatry.

Lord Chief Justice Coleridge, speaking in England in 1888 said, "The law in the matter of insanity is not incapable of being so interpreted as to do terrible injustice."

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Criminal responsibility is an elusive, fluid thing. One cannot dogmatize on it or lay down rigid definitions which are to last for all time. This suggestion the lawyer may reject, on the grounds that psychopathological thought is a fluid thing, changing from day to day, with the result that a criminal held responsible today may be deemed irresponsible tomorrow, and that the doctors, themselves, disagree among themselves and not infrequently contradict each other on the same witness stand during the same trial. The result is deadlock. Lawyers, regarding irresponsibility as a disorder of the intellect, demand that the boundary line between responsibility and irresponsibility shall be clearly defined. Medical science, regarding irresponsibility as a disorder of the emotions, insists that no definable boundary line exists. There are judges who welcome the most detailed and comprehensive medical evidence, not only with regard to the accused's mental poise during the medical examination, but concerning his mentality at the moment of the act. Others tend to beam with patronizing condescension upon the psychiatrist as if tactfully tolerating the eccentricities of a crank, while others regard him as a hired perjurer, retained for the purpose of ridiculing the obsolete machinery of the law. As a result, the unfortunate doctor who is called as a witness does not know what is required of him.

The war which is perpetually being waged between psychiatrists and lawyers upon the question of criminal responsibility will probably never come to an end. As Dr. Havelock Ellis has so clearly indicated, "our courts of justice are still pervaded by the barbaric notion of a duel. We arrange a brilliant tournament, and are interested not so much in the investigation of truth as in the question of who will win." Attempts to achieve peace have been made by suggesting the adoption of a compromise, the terms of which are that while medical men must forbear from demanding that lawyers should abandon their ancient axiom that a criminal may only be regarded as irresponsible through his ignorance of moral right and wrong, the lawyers must, on their part, concede upon the bearing of the latest achievements in psychopathology.

There are many definitions and tests of

responsibility. It has been suggested that if you are to class a criminal as responsible, you must prove that he "willed" the crime, intended the consequences of his act and sought to benefit himself by the crime, and that the criminal knew and appreciated the conditions under which he committed his crime. If any one of these considerations were absent, responsibility could be assumed to be impaired or nonexistent. The French Penal Code enacts that "there can be no crime or offense if the accused was in a state of madness at the time of the act," and the Statutes of the State of New York affirm that "no act done by a person in a state of insanity can be punished as an offense."

There is a growing assumption on behavioristic grounds that there is doubt as to the sanity of all murderers. Some morbid mental process, they reason, must be operating in the mind of a murderer, otherwise he would not murder. They base their view, not without logic, on the fact, well known to psychopathologists, that large numbers of people go through life tormented by a vague impulse to kill. From time to time a test is suggested which will definitely constitute the criterion of criminal responsibility, but they have invariably been rejected after consideration. There are some who consider as criminally irresponsible any man who is certifiably insane. But insanity is normally the exaggeration of only one function of the brain, and to bracket as equally irresponsible for the crime of murder the madman who kills his brother under the genuine delusion that the latter has entered his bedroom with the object of killing him (the madman), and the harmless hermit, whose only desire is to be alone, would be absurd.

While the views of conflicting schools of psychology may carry little weight at criminal trials, it is true that facts, indisputable facts, do sway judges and juries. Facts are evidence. If it is shown on behalf of an accused person, that he, or a blood relation, has at any time manifested the symptoms which we associate with borderline cases, the witness who produces such facts as evidence is addressing the court in understandable language. The attitude of the law towards criminal responsibility may be defined, roughly, as far as I am able to deter-

mine, as follows: "An accused person is not responsible for a crime committed when he was prevented by mental defect from distinguishing moral right from moral wrong at the moment of the crime, or from grasping the moral significance of the crime." Judges in practice may tend to accept proof of such mental defect *immediately* prior to a crime as implying continuance of that mental defect up to and including the moment of the crime. Ability to appreciate the nature of the crime, then, is the essence of the test usually favored. But such a test discredits itself by its rejection of the one reasonably sure index of insanity, namely, controllability. You can walk for miles through the wards of large mental hospitals and you will find only a small proportion of the patients who do not know the difference between right and wrong. The bulk of certified patients know full well the difference, but they fail to apply that knowledge to the everyday things of life—they lack self control.

Sir James Stephan remarked many years ago in his "History of the Criminal Law of England," about the connection between insanity and controllability and went on to say that if ever the Criminal Law of England should be codified, it should be made clear that the essence of insanity is loss of self control. From the legal standpoint, it is taken for granted that if a motive for a crime is obvious, the person accused of the crime is sane, and, being sane, responsible. But even a madman may have a motive. The fact may be ignored that an insane person, being endowed with the same instinctive passions as the one who is sane, may direct those passions towards the fulfillment of that motive. The sane man with a motive can regulate the operation of that instinct which urges him to realize his motive. The psychotic cannot exercise that control. The psychotic, like the sane man, may "know the difference between right and wrong, but he differs from the sane man by his inability to choose between right and wrong." Further, a person may be sane but irresponsible. A child under the age, for example, of seven, may be perfectly sane, but the law exempts him from criminal liability. Again, a man may, while sleeping with his wife, dream that he is being attacked by a wolf and, in his dream, grapple with the wolf

and strangle it, only to find on waking that he has strangled his wife. You may argue that a sane man asleep is still a sane man. But the mind in sleep can be anything but normal. You only have to recollect the ghastly nature of some of your dreams to realize that your mind in the dream state runs amuck, free, uncontrolled and literally abnormal.

In a criminal trial it is insanity which must be proved, not sanity, for just as it is a fundamental assumption in law that every man is innocent until he has been proven guilty, so every man is deemed sane until his insanity has been established. Insanity may be advanced when it appears that the accused is suffering from mental disorder such as to render him incapable of instructing counsel for his defense. At times it is difficult to differentiate between whether the accused feigns insanity, "mute of malice," mute, as a definite form of insanity, mute being obstinate, or mute "by the visitation of God," that is, deaf mutism.

You are all familiar with the concepts of the "criminal insane" and the "insane criminal." The difference between these two classes has never been so finely defined as it was by a writer in the *Medico-Legal Journal* of New York for September, 1898. "In a strictly legal sense," he explained, "there is no insane criminal. The act of the insane, which in the sane would be criminal, lacks every element of crime. A sane man who has committed a crime may thus become insane, either before or after conviction for the crime. He may be rightfully called an insane criminal. If the insanity developed before the trial, the law would suspend his trial while the insanity continued. If the insanity came after conviction, he should then be treated as an insane man, not as a criminal." If you delve back into the origin of our laws, you will find that as insanity was not then regarded as such, the question of criminal responsibility could not, and did not, arise. Though, curiously enough, when insanity gradually became to be recognized, the criminal acts of the insane interested the courts of those days, not so much as regards the disposal of the accused, as the disposal of his property, a verdict of guilt involving, in certain cases, forfeiture of the whole or part of his goods. Further, the only form of insanity recognized as such

was permanent insanity. Neither partial nor intermittent insanity was recognized. The recognition, as insanity, of permanent and total insanity only, persisted until the middle of the 18th Century and its operation in practice is illustrated by the case of a man, Arnold, who, under the delusion that the then Earl of Onslow (1724) was persecuting him, by sending invading armies of devils into his bedroom every night, shot at and wounded Lord Onslow. Insanity was pleaded in his defense, but dismissed as irrelevant by the Justice on the ground that Arnold could not be regarded as insane "unless he was *totally* deprived of his understanding and memory and did not know what he was doing any more than an infant, a brute or a wild beast." Later on, the attention of jurists was attracted to the question of criminal responsibility by the appearance of Blackstone's famous "commentaries" (1765) in which he pleaded for a reduction in the number of offenses punishable by death and a more humane conception of insanity. Two other circumstances also aroused interest in the question: the insanity of the reigning Monarch George III, and in 1800 a homicidal attack on that insane King by an insane subject, Hadfield, who suffered from auditory hallucinations; believed he was ordered by the Deity to sacrifice himself for the sins of the world. The jury, by directed verdict, found him "Guilty but Insane." In 1840 a youth named Oxford was tried in Old Bailey for the attempted murder of Queen Victoria, in that he fired twice at the Queen as she drove along in an open carriage. At the trial medical and other evidence disclosed abundant proof of insanity in the family, Oxford's inclination to revel in his act, his delusion that he was the leading light of an existent anarchist group, total inability to judge or reason, no moral sense, and indifference to his fate if found guilty. He was, accordingly, acquitted on the ground of insanity at the time of the act and inability to dis-

tinguish between right and wrong. In 1843 the famous case of the paranoic McNaughton, with which you are all undoubtedly familiar, provoked such debate that it became a distinct precedent. McNaughton suffered from delusions of persecution. He turned his attention to Sir Robert Peel, who he thought was his enemy. Unfortunately, he mistook a Mr. Drummond for Sir Robert Peel, waylaid and murdered him. Insanity was pleaded and, for the first time, the theory of partial insanity, advanced just at that time in France by the psychiatrist, Esquirol, was employed, resulting in acquittal on the ground of insanity. The answers of the fifteen judges who were given questions by the House of Lords established the precedence of the McNaughton Rule.

It is recognized, for example, that there are certain borderline cases whose actions are determined more or less by the same motives and consideration as those whom we call normal and upon whom the fear of punishment acts as a deterrent.

The Freudian doctrine of psychological determinism denies the existence of chance in the psychical world as in the physical world. Freud recognizes the term "responsibility" only as denoting the normal reaction of civilized society to any specified act. Neither lawyers nor psychiatrists have been able to evolve, either separately or conjointly, any rigid definition of insanity, for the simple reason there is none; and, since it is virtually impossible to define insanity, it is still less possible to define responsibility for the latter is governed by the former. The nearest approach to a workable definition of responsibility is that of Rosanoff, a Freudian, who says, "Responsibility, in the sense of profitless retribution for wrongdoing, does not exist scientifically in any case. On the other hand, everybody is responsible in the sense of being liable to forfeit his liberty, property or the restoration of damage caused by him."



## ANIMAL EXPERIMENTATION\*

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Another type of experiment was concerned with poisons. Fontana, Magendie, Brodie and Johannes Müller fed or injected poisons and observed the response of animals so treated, autopsying them after death.

Physiologists at the turn of the nineteenth century had a better background than their predecessors. Methods of chemical analysis, a knowledge of gases, an interest in electrical phenomena and a greater appreciation of the experimental method served to advance the science. Up to the first decade or two of the nineteenth century, physiological technic was in the kitchen utensil stage. Hewson spoke of teacups and tin pans as experimental materials. Leeuwenhoek, Spallanzani, Galvani and others used many familiar household articles. Quills and animal bladders were common experimental accessories, and excised arteries and bird tracheæ served as flexible tubing.

Under Magendie, Johannes Müller and their students, special equipment came into use. Pipettes, rubber tubing, special canulae and syringes were devised. Special equipment of physicists and chemists was adapted. Poiseuille devised the U-tube mercury manometer for measuring pressure in place of the long vertical tube used in the blood pressure experiments of Hales. Many innovations came from the laboratories of Claude Bernard, Ludwig and Helmholtz. By the mid-nineteenth century, the kymograph, the myograph and several types of artificial respirators were devised. Later, Marey and others developed more extensive types of graphical methods.

Physiology was distinctly entering upon its modern phase as a discipline quite apart from anatomy in having characteristic equipment and methods. As early as the 1830's, the newer attitude in physiology became evident. Haller's textbooks became obsolete, and many of the older methods went with them. Vivisection in the sense of dissection of living animals for simple observation was abandoned, and in its place

came methods of experimental analysis of animal function. The determination of physiological actions by simple autopsy following administration of poisons, alteration of respiratory gases or injection gave way to methods of studying changing patterns in the living animal. In the hands of Pasteur and early experimenters on infectious diseases, however, the older method of autopsy again became temporarily significant. Magendie had occasionally used opium to deaden pain in experimental animals, and, with the discovery of general anesthesia, this method was adapted to allay pain and to facilitate experimentation by quieting the animal.

During the nineteenth century, invertebrate animals were not routinely used as in earlier centuries. The frog, that "Job of physiology," was the most frequently used animal, and the turtle came to be next in importance among the cold-blooded animals. The dog, rabbit, cat and occasionally draft animals and birds became routine subjects. Though native animals were predominant, the guinea pig, imported from Peru and tropical America as a children's pet, came into use. For instance, William Allen, in 1809, and Brown-Sequard later used them experimentally. Magendie tended to use dogs as standard animals, these being obtained from the vagrant canine population of Paris through the medium of professional dog-catchers.

Occasionally, physiologists experienced difficulty in obtaining animals. The dog, for instance, which was subject to von Baer's demonstration of the first mammalian ovum was a household pet of his friend Burdach, who turned it over to von Baer for the demonstration.

In 1844, Claude Bernard made an experiment on a dog obtained through regular channels and inserted a silver canula in its stomach. After the animal had convalesced and was ready for a long-time experiment, the dog escaped from its enclosure. A day or so later, an irate man, the local police commissioner, who claimed to be the dog's master, appeared. When explanations were

\*Continued from January, 1938, issue.

made, it became apparent that the dog had been stolen and sold for experiment. Bernard removed the canula and returned the dog to its master, who thenceforward evinced a friendly lay interest in Bernard's experiments. These, however, were but casual incidents in the studies of research workers.

Active resistance to the progress of research arose when humane societies objected to physiological experiments. The later eighteenth and early nineteenth centuries were periods of great humanitarian activities, and the awakened interest in human values led to such substantial advances as the abolition of slavery, poor relief and prison and hospital reform.

Jeremy Bentham pointed out that humane treatment of domestic and draft animals should be a significant feature of humanitarian activities. The first official recognition of this humane idea was "Martin's Act" of 1822, a parliamentary bill which provided penalties for mistreatment of cattle, draft and domestic animals. Enthusiasts in England saw an important outlet for humanitarian ideals in the suppression of cruelty to animals, and, in 1824, under Richard Martin, formed the Royal Society for the Prevention of Cruelty to Animals. During the 1840's, the London SPCA turned its attention to antivivisection propaganda and sponsoring prize essay contests. It was also at this time that German and Austrian societies appeared with antivivisection as a prominent feature.

To members of the humane societies, the procedure of physiologists was meaningless. They were shocked at the simple vivisection technic of earlier years, and the more complicated technics and careful planning of experiments were considered nothing more than intentional brutality. The mule driver, the sportsman, the furrier and the butcher did not have such devious methods of handling animals. A group of extremists referring to themselves as antivivisectionists wrote to the public press countless letters rife with such adjectives as "atrocious," "brutal," "cruel," "horrible," "barbarous," "piteous" and other terms which showed an impassioned rather than a judicious attitude.

In 1860, a large deputation of the London SPCA met in Paris with the Société

Protectrice des Animaux. The society had unearthed an intolerable practice in a French veterinary school at Alfort. At this school, the students performed under supervision a series of practical operations on living unanesthetized animals. Standard operations on the hoofs, hocks and tail were made on old horses and were followed by more severe procedures. Here was indisputable proof of vivisection—a dissection of living animals. The London society protested to the French emperor, Louis Napoleon, who temporarily prohibited the practice and referred the matter to the Académie de Médecine for official consideration. A committee of the academy under Moquin-Tandon reported on the importance of animal experimentation and stated that the practice was invaluable in the hands of trained investigators.

An international congress of SPCA was held in 1862 with vivisection as the chief subject for discussion. In England, increased agitation against the use of animals appeared in the newspapers, and, in 1871, a resolution was passed by the physiological section of the British Association for the Advancement of Science at its Edinburgh meeting. The resolution recommended that anesthetics be used in experiments, if at all possible, that demonstrations before students or others should not include painful experiments, and that experiments should be performed only by trained investigators with adequate assistance and instruments. It further recommended that practice operations on animals for the purpose of obtaining manual dexterity among students ought not to be performed.

Under Martin's Act, domestic animals had been protected against cruelty, and although the humane organizations had been attempting for years to indict physiologists for cruelty, no formal charges had been pressed. Between 1835 and 1876, 28,209 convictions had been made under the act, but no physiologist had been involved.

In 1874, the British Medical Association invited Eugène Magnan, a French physiologist, to present a program at its Norwich meeting. Magnan demonstrated an experiment in which the effects of alcohol and absinthe were compared, a dog being injected with each drug. The SPCA instituted its first prosecution as a result of this

experiment, but it was unsuccessful since Magnan was beyond the jurisdiction of the English court. Several surgeons testified against their French guest, one asserting that his sportsman training would not permit him to allow dogs to be mistreated by experiments which proved nothing. (Magnan was later given a prize in his own country in recognition of the importance of his experiments.) In fact, the medical profession as a whole gave but mild support to proponents of animal experiment. The *Lancet* under the Wakelys bent over backwards in order to be fair and humanitarian, contenting itself with impartial comments almost up to the very month of antivivisection legislation in 1876. *L'Union Médicale* also showed great sympathy toward the antivivisectionists.

Following the Norwich incident, letters and articles appeared in increasing numbers and, in 1875, a Parliamentary Commission was appointed to investigate. After many hearings, the Royal Commission reported, indicating that charges of cruelty had been exaggerated and that the work of experimenters was of great value. The Commission, however, recommended that experimenters be licensed, that demonstration experiments be discontinued and that conditions similar to those already outlined by the British Association should be mandatory.

The Law of 1876 which resulted from the investigation, when it finally appeared after last minute action on the part of medical organizations had stripped it of extreme and insulting prohibitions, was still strict. Experimenters must be licensed annually by the Home Secretary after obtaining recommendations from the officers of high scientific, medical or veterinary organizations. Licenses allowed experiment on animals if anesthetics were used, if the animals were killed after the termination of an experiment and if the nature of the experiment were reported to the Home Office. Any experiment planned that involved pain, that was for demonstration of physiological laws to classes, that demanded the maintenance of life in the animal after operation, that avoided the use of anesthetics and any repetitions of an experiment made to test its validity must be done under special certificates. In a legal sense, the

law put great powers in the hands of the Home Secretary. He could grant or refuse licenses and consent to the prosecution of physiologists—all without any training to fit him for this responsibility.

In legislating against demonstration experimentation, the law virtually prohibited humane organizations from visiting laboratories. Societies for the total abolition of vivisection, which increased in number even after the passing of the law, thus had no direct contact with the practice which they sought to prohibit.

English physiology at the time of antivivisection legislation was in a transition state. Physiology had not received recognition as an independent science; histology and embryology were considered as physiological disciplines and the subject was ordinarily taught by anatomists. The records of the licenses for animal experimentation during the first five years of the antivivisection law show that in the whole of the British Isles less animal experimentation was practiced than in a modern, large, American medical school. Twenty-five to forty licenses were issued per year (some not being used), and three to five hundred experiments were made. These figures referred to frog and turtle experiments as well as to those on higher forms.

During the activities of the London SPCA and the antivivisection organizations, physiologists in England—Sharpey, Huxley, Rutherford, Gangee, Ferrier, Stirling, Burdon-Sanderson, Foster—were very few in number. It was a period, however, of increasing interest in the science. In 1878, the first volume of the *Journal of Physiology* appeared under the editorship of Michael Foster and with the coöperation of American physiologists. This journal is predominantly a record of physiology in England under legal restriction. Despite handicaps, it shows the activity of such men as Langley, Gaskell, Ringer, Bayliss, Starling, Sherrington and Barcroft in developing English physiology to a state not inferior to other countries.

In 1866, the American Society for the Prevention of Cruelty to Animals was founded in New York by Henry Bergh, and although this organization disclaimed any connection with antivivisection activities, other local societies arose, and in a few



years, antivivisection legislation was proposed in New York (1879), Massachusetts and Pennsylvania. The proposed legislation was never reported from committee, but time and again new efforts were made to force legislation in increasingly innocuous form. Antivivisectionists came to be typed as a minority group whose suggestions were tabled as a routine. It has usually been considered in this country that the general laws for the protection of animals against cruelty were adequate, and that special restrictive laws against experimenters were legally unnecessary. Nevertheless, antivivisection legislation is routinely proposed in a half dozen states each year. In two states, Colorado and California, such legislation has been put to public vote, but the measures were defeated in each case. Even so, it occasionally became difficult for physiologists in restricted localities to conveniently procure sufficient experimental animals. In St. Louis, for instance, and it has happened in other localities, humane societies have occasionally obtained control of impounded animals and have refused to deliver them for experimental purposes.

In England, the Protection to Animals Act and the Animals' Act were passed in 1911 and 1919 after considerable antivivisection activity. In America, simultaneous agitation appeared, but without the passing of laws. In the first decade of the twentieth century, the American Medical Association with the coöperation of American physiologists codified a series of regulations regarding the conduct of experiments in American laboratories which was as follows:

I. Vagrant dogs and cats brought to this laboratory and purchased here shall be held at least as long as at the city pound, and shall be returned to their owners if claimed and identified.

II. Animals in the laboratory shall receive every consideration for their bodily comfort; they shall be kindly treated, properly fed, and their surroundings kept in the best possible sanitary condition.

III. No operations on animals shall be made except with the sanction of the Director of the Laboratory, who holds himself responsible for the importance of the problems studied and for the propriety of the procedures used in the solution of these problems.

IV. In any operation likely to cause greater discomfort than that attending anesthetization, the animal shall first be rendered incapable of perceiving pain and shall be maintained in that condition until the operation is ended.

Exceptions to this rule will be made by the Director alone and then only when anesthesia would defeat the object of the experiment. In such cases

an anesthetic shall be used so far as possible and may be discontinued only so long as is absolutely essential for the necessary observations.

V. At the conclusion of the experiment the animal shall be killed painlessly.

Exceptions to this rule will be made only when continuance of the animal's life is necessary to determine the result of the experiment. In that case, the same aseptic precautions shall be observed during the operation; so far as possible the same care shall be taken to minimize discomforts during the convalescence as in a hospital for human beings.

In Germany, in the 1880's, a bill for the limitation of animal experimentation was presented to the Reichstag and the testimony of Virchow as to the significance of the method prevented legislation.

In the latter decades of the nineteenth century, physiology assumed its modern character. Electrical current from central power stations, instruments for measuring electrical energy, more certain knowledge provided by physicists in the fields of mechanics, heat, light and sound, and the x-ray received application by physiologists. Graphical methods and the use of photography were standard technics. The statistical method had been adapted in many cases to experiments so that criteria of reliability were available. The older method of recording protocols became of minor significance. Complex technical procedures were common in experiments. Many variables were simultaneously recorded with kymographic and photographic records. Perfusion experiments were made on isolated organs or excised parts of animals, and the complex technic of crossed circulation experiments came into occasional use. In the latter procedure, the blood supply to a region is provided by anastomoses with a second animal while the nerve supply is not altered. Pavlov showed the value of making long time observations on animals that had completely recovered from operations which altered normal physiological functions. He also showed the significance of avoiding operative shock and the desirability of maintaining a normal psychological state in experimental animals.

The method of animal experimentation likewise came to be used in fields of surgery, pharmacology, toxicology, experimental pathology, bacteriology and immunology. Application of animal experimentation in the hands of Pasteur and other bacteriologists gave emphasis to the significance of

controls, and their experiments which were best conducted on small animals gave rise to the practice of breeding colonies of small animals, such as rabbits, guinea pigs, rats and mice, for experimental purposes. The studies in the chemistry of nutrition, in vitamins and hormones, were also done, to a large extent, on small animals. The knowledge of Mendelian heredity introduced about 1900 emphasized the importance of homogeneous animals strains. Accordingly,

inbred stocks, such as the albino rat strain of the Wistar Institute developed since 1907 under H. H. Donaldson and M. J. Greenman, came to have a great importance in small animal experimentation. The complexity of physiological problems, particularly on the nervous system, and the difficulty in transmitting diseases to certain small animals gave rise in the post-war period to increasing use of the monkey and ape.

#### Serodiagnostic Tests for Syphilis as Performed by Thirty-nine State Laboratories: Comparative Study

In a report of the Committee on Evaluation of Serodiagnostic Tests for Syphilis, Thomas Parran, Washington, D. C., and his associates (*Journal A. M. A.*, Aug. 7, 1937), state that the results achieved in the first evaluation study of serodiagnostic tests for syphilis in the United States reflected great credit on several of the serologists who had developed original methods. It was pointed out in the report of the committee that the actual serologic testing was done under relatively ideal conditions in the laboratories of the originators of the methods and that the results did not necessarily compare with those attained in other laboratories utilizing the same methods. In the second evaluation study the committee attempted to meet more closely than was possible in the first evaluation project the conditions encountered in ordinary practice. The efficiency of thirty state, municipal or private laboratories in the performance of serodiagnostic tests for syphilis was measured. The results achieved in many of the state and local laboratories were quite comparable with those attained by the originator of the method employed, who tested comparable specimens as a control measure. It was also obvious that the serologic testing in certain state and local laboratories was highly inefficient. These observations led the committee to recommend that the United States Public Health Service make an annual comparison of serodiagnostic tests for syphilis done by all state laboratories. It was further recommended that the state laboratories should in turn offer a similar opportunity for comparative testing to the municipal, hospital and private laboratories within each state. It was, however, quite apparent from the results reported by some of the state laboratories that it would be unwise for them to inaugurate a method of control of the local laboratories within their boundaries until they had attained a much higher level of efficiency. In accordance with the recommendations of the committee, the Surgeon General of the United States Public Health Service invited the health officers of the forty-eight states and the District of Columbia to participate in an evaluation study. The invitation was accepted by the health officers of thirty-nine states. A study of the tables and graphs reveals that some of the state laboratories are qualified neither to perform efficient serodiagnostic service nor to inaugurate any system of state licensure or approval of local laboratories within their respective states. On the other hand, it is gratifying to observe that in many of the state

laboratories the performance of serodiagnostic tests for syphilis is maintained at a highly efficient level. A study of the technics employed in the serodiagnostic tests for syphilis submitted by the state laboratories reveals that many of them have deviated greatly from the technics described by the originators of the methods. Many of the tests that were designated as Hinton, Kahn, Kline or Kolmer tests by the performers were so modified that it would be an injustice to the originators of the methods to refer to them as such. The data derived from this investigation indicate that the routine employment of a single serodiagnostic test, although performed by competent workers, is occasionally unreliable. If a single test is used as a routine the laboratory should be prepared and willing to carry out a second test with a different method on request. The extraordinary disparity in the results of this study indicates the urgent need for the provision of intensive and extensive training of personnel in certain of the laboratories. The committee made the following recommendations to state health officers: 1. That provision be made for adequate training of state and local laboratory technicians in the laboratories of the originators of the methods employed in the respective laboratories, and that in the future only thoroughly competent technical personnel be employed. Funds now being made available to the states under the provision of the Social Security Act and allotted for the training of personnel should be utilized for the tuition and stipend of the state and local laboratory technicians. 2. That a system of periodic inspection of state laboratories by thoroughly trained serologists of the United States Public Health Service be inaugurated and made available on the request of state health officers, and that advantage be taken of the system of comparative examination of serodiagnostic tests for syphilis to be extended annually by the United States Public Health Service. 3. That the facilities available for special study of serologic methods in the Venereal Disease Research Laboratory of the United States Public Health Service at Stapleton, Staten Island, N. Y., be further utilized for the training of personnel from state laboratories. 4. That the need is again emphasized for the development by state laboratories of a system of periodic comparative examination of the performance of serodiagnostic tests by municipal, hospital and private laboratories located within the respective states. 5. That full advantage be taken of existing local laboratory facilities and that provisions be made to approve and subsidize qualified local laboratories for the performance of diagnostic services in the control of syphilis.

# THE JOURNAL

OF THE

## *Michigan State Medical Society*

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FEBRUARY, 1938

*"Every man owes some of his time to the up-  
building of the profession to which he belongs."*

—THEODORE ROOSEVELT.

## EDITORIAL

### WHAT IS THE AMERICAN MEDICAL ASSOCIATION?

EVERY member is or should be conversant with the functioning and services rendered by his county medical society. The establishment of the headquarters of the state medical society at Lansing with a full time executive is rendering a service that is realized by most members of the Michigan State Medical Society. To recapitulate: the medical defense feature; acting as a liaison between the legislature and the medical profession as a whole in all matters pertaining to public and private health; the functioning of various standing committees; preparations for the annual meetings; and, in general, the conduct of business in the broadest sense which pertains to the medical profession of this state as a whole, and might we add, last but not least, the publi-

cation of THE JOURNAL of the Michigan State Medical Society.

But what is the American Medical Association? Each member who has paid his annual membership or fellowship dues to the American Medical Association has received a small brochure of sixteen pages which answers this question in concise form. It is hoped that whoever receives this brochure will take a half hour off to read it through. But for fear that it may have fallen into the hands of some doctor whose time is at a premium, we shall attempt a summary.

The House of Delegates of the American Medical Association elected from each state determines the policy of the Association. The administration of that policy is the function of the Board of Trustees which acts in the interval of the annual meetings held from year to year in various sections in the United States. Immediately under the House of Delegates is the Judicial Council which has jurisdiction on all questions of ethics as well as the interpretation of laws of the organization. Among these are obligations, rights and privileges of fellowship as well as controversies arising under the constitution and by-laws to which the association is a party. The Judicial Council is composed of five members elected for five years.

Then there is the Council on Medical Education and Hospitals. The influence of this council during recent decades has been felt in the advancement of requirements for college entrance, lengthening of college sessions, reorganization of courses as well as improvement in building and laboratory facilities. The council on medical education and hospitals is equipped to supply to members of the associations any information on the subject of either hospitals or of medical education.

The Council on Scientific Assemblies arranges programs of general meetings and of scientific assemblies and secures cooperation between the sections. This committee passes on questions of policy in relation to the scientific work and investigations and reports on scientific questions.

For over thirty years, the biographical department has collected personal data regarding medical graduates and licensed phy-

JOUR. M.S.M.S.



sicians of the United States and Canada. These records are available to all fellows of the Association. Part of their work is the American Medical Directory which is issued every two years.

The Council on Pharmacy and Chemistry offers protection to physicians in choosing proprietary remedies. This body constitutes a scientific judicial investigating medium for newly introduced medicinal preparations. The results of its work are reported in *THE JOURNAL* and annually in the book, "New and Non-Official Remedies." The Council on Physical Therapy performs a like function in regard to the non-medicinal therapeutic agents.

The Council on Foods endeavors to establish truthful advertising of foods in the interest of the public. The seal of approval of the American Medical Association is placed on "accepted foods." The value of this approval is evident in the numerous requests, not only from physicians, but from food industries and advertising agencies, on matters pertaining to food and food advertising.

The American Medical Association chemical laboratory is admirably equipped for investigation, not only of newer remedies but for special types of analyses. It functions along with the Council on Pharmacy and Chemistry.

The Bureau of Investigation is concerned with patent and proprietary medicines as well as all forms of quackery, medical fads and fakes. It supplies information to physicians who may want to address local organizations on some phases of the patent medicine evil. The Bureau of Health and Public Instruction works through the physician in medical societies. It has direct contact with the public through the lay health magazine, *Hygiea*. Service to the public consists also in correspondence in which approximately 15,000 questions a year put by lay inquirers are answered. The radio network program is also a function of this committee. The Bureau of Exhibits has in charge the science and health exhibits of the association.

An important service rendered is that of the Bureau of Medical Economics which studies all phases of general economy which have a bearing on the practice of medicine. The Bureau collects, tabulates and studies,

and prepares for publication and distribution data pertaining to economics of practice. Many of our readers are already familiar with this brochure and booklets on different subjects as well as the work of the Bureau published from time to time in the *Journal of the American Medical Association*.

Then there is the American Medical Association Reference Library where more than 1,300 medical journals, domestic and foreign, are abstracted and indexed. The abstract feature of the journal is familiar to all readers. An index of articles currently published is provided through the *Quarterly Cumulative Index Medicus*.

The American Medical Association publish not only the *Journal of the American Medical Association* and *Hygiea*, but a number of special journals such as *Archives of Internal Medicine*, *American Journal of Diseases in Children*, *Archives of Neurology and Psychiatry*, *Archives of Dermatology and Syphilology*, *Archives of Surgery*, *Archives of Otolaryngology*, *Archives of Pathology*, *Archives of Ophthalmology*, and the *Quarterly Cumulative Index Medicus*.

In addition to it all, through the secretary of the American Medical Association and its councils and bureaus, the association is always willing to lend any assistance asked to various state and county medical societies. Probably no other organization of a scientific nature is in closer touch with its individual members or in a position to render greater service when called upon. Do not, however, be content with this editorial summary of the activities of the national organization, but read carefully the little silver and blue covered brochure which accompanies your membership card.

### ANALGESIA IN LABOR HAS ITS DANGERS

IN THIS number of *THE JOURNAL* is a paper by Drs. Schreiber and Gates on the subject of "Cerebral Injury in the New-born Due to Anoxia at Birth." It is not too far afield to say that only the worst results come under the care of the neurosurgeon. May we not then assume that conditions here described are extreme results

of the efforts towards painless delivery. The fact, however, that such is possible must give us pause. Painless childbirth has always been a consummation devoutly to be wished. No doubt the refinements of civilization have placed the modern woman at a disadvantage as compared with her primitive ancestor. For centuries, pain was considered an accompaniment of childbirth which had to be accepted. It was referred to in the Bible as a necessity and when Simpson of Edinburgh discovered chloroform and suggested as one of its uses the mitigation of pains of labor, the church was most formidable in its opposition. Chloroform anesthesia was denounced as unscriptural. However, humanitarianism won the victory over the Kirk so that long since with countless thousands of women, the second stage of labor has been rendered comparatively painless.

Within the past two or three decades, efforts have been made to render the earlier stages of labor painless also. Twilight sleep has received a great deal of advertising in the lay press so that the idea has had almost a universal appeal among mothers-to-be. The bridge table, magazines and other means of communication such as Woman's Clubs, have spread the gospel of painless childbirth so that it has been virtually forced upon the medical profession, in many instances against their better judgment. We put it this way inasmuch as analgesia drugs are not by any means free from danger and many are more or less imperfectly understood. One should be very much guarded in using them and above all, even when properly used, one should be in a position to meet any possible emergency. The majority of confinements are now and will be for some time to come, served by the general practitioner. Many physicians with care and experience have attained a high degree of skill in obstetrics. However, a high degree of proficiency is becoming more necessary than in the pre-analgesic period. The effects of analgesia diminish the consciousness of the patient in labor to such a degree that she is unable to assist in the so-called second stage of labor, a fact that calls for instrumental delivery which in turn, as mentioned, calls for more than ordinary skill.

A wholesome regard for these new synthetic drugs and a thorough knowledge of

their action as well as contraindication will save the obstetrician much embarrassment, be he general practitioner or specialist. With the paper by Schreiber and Gates we suggest a re-reading of the "Newer Obstetrics," by Kamperman, which appeared in the December, 1937, number of this JOURNAL.

#### HE PRACTICED FIFTY YEARS

Quite frequently during the year some venerable member of the medical profession of this state is honored by a complimentary dinner on the completion of a half century in the practice of medicine. The following little poem is very appropriate for such occasions. The author is anonymous to us. We, however, credit the *New York State Medical Journal* in which it was first printed. The occasion on which it was first read was at a half century celebration at Dorset, Vermont, during the past year. It applies to any physician who has labored in the cause of humanity wherever he may be.

Better fifty years of doing  
Than a century of thought!  
For how rare by cloistered thinking  
Has a useful thing been wrought!

A sword kept keen and polished  
Is an enemy to dust  
But a blade unused, neglected,  
Falls a prey to mordant rust.

Half a century of endeavor!  
Half a century of toil!  
Not a thousand years can tarnish  
Not a million years can spoil.

So keep the fires a-burning  
And may you never feel  
The hammer growing heavier  
As you forge your hoops of steel.

After all these years of service  
What we say seems oh! so slight—  
For we feel and know all honor  
Is yours by hard-earned right.

Also yours—Beloved physician,  
Sage, counselor and friend—  
Is our heart's true deep devotion  
Now and ever without end.

Affable Waiter—How did you find the steak sir?  
Diner—Oh, quite accidentally. I moved that piece of potato, and there it was, underneath.

War in Church—A bishop was invited to dinner. During the meal he was astonished to hear the young daughter of the house state that a person must be very brave these days to go to church.

"Why do you say that?" asked the bishop.

"Because," said the child, "I heard papa tell mamma that last Sunday there was a big shot in the pulpit, the canon was in the vestry, the choir murdered the anthem, and the organist drowned the choir."—*Exchange.*

Some of the depression sufferers are like the darkey who had been playing poker.

He said: "Tell you, boys, I dun los' a heap o' money las' night."

"How much did you lose?"

"A hundred and eighty-seben dollars an' fohteen cents."

"Golly! dat wuz a heap o' money."

"Yas, siree, and de wust of it wuz, de fohteen cents wuz cash."—*Exchange.*

# President's Page

## TEAMWORK

ONE picture is worth ten thousand words so a small cartoon, with the above caption, is reprinted in this issue of THE JOURNAL.

Teamwork, it shows, leads to success!

Teamwork is a requisite of every medical society in this enigmatical year of 1938 when intelligent courage and strength of numbers is required to fight fear and subversive forces.

Teamwork is necessary between the component county medical society and the State medical society.

Teamwork is likewise vital between the allied scientific professions of medicine, dentistry, nursing, pharmacy, etc.

Encouraging is the recent formation of the Michigan Health League, composed of the allied professions of Michigan, augmented by laymen interested in health. This agency is designed to serve the health and best interests of the people of this state by informing the public concerning the proper evaluation of the allied sciences, and by safeguarding the people against impositions and misrepresentations of unscrupulous charlatans. The League will provide a medium for discussing and taking concerted action on all matters of common interest to licensed physicians, dentists, nurses, pharmacists, etc.; it will work to elevate ethical professional standards; it will seek enactment of laws to effect the greater usefulness of the allied scientific sciences; it will support public health departments, approved hospitals, ethical pharmacists, laboratories, and other qualified agencies in their efforts to reduce the prevalence of disease and disability.

Teamwork among the scientific professions of Michigan is here. The Michigan Health League is *your* vehicle. You and your health-minded lay friends are invited to get on the band-wagon and join the parade of progress—to Success.

Respectfully submitted,

*Henry Cook*

President, Michigan State Medical Society.



## DEPARTMENT OF SOCIETY ACTIVITY

L. FERNALD FOSTER, M.D., Secretary

### ANNUAL CONFERENCE OF COUNTY SECRETARIES

**T**HE Annual Secretaries' Conference for 1938 was held in Lansing at the Olds Hotel on Sunday, January 23, 10 a. m. to 4 p. m. This annual meeting, designed to inspire and instruct the county secretaries, is arranged by the State Society's Council.

The program at the 1938 conference was as follows:

- Call to Order by Chairman L. E. Holly, M.D., Muskegon.
- Welcome by M.S.M.S. President Henry Cook, M.D., Flint; and by Ingham County President Dana M. Snell, M.D., Lansing.
- Presentation of President-Elect Henry A. Luce, M.D., Detroit; and of Council Chairman P. R. Urmston, M.D., Bay City.

#### Morning Program

1. "Public Relations by the County Medical Society"—LAWRENCE C. SALTER, Medical Editor, *Detroit Free Press*.  
Discussants: A. J. Baker, M.D., Grand Rapids; C. G. Clippert, M.D., Grayling.
2. "How to Achieve Maximum Membership"—MARTIN H. HOFFMAN, M.D., Eloise.  
Discussants: Wm. M. Brace, M.D., Ann Arbor; John A. Hookey, M.D., Detroit.

#### Recess for Noonday Chicken Dinner

3. "The S.S.S. of Medical Practice"—ALLAN W. McDONALD, M.D., Detroit.
4. "Medicine in the Front Line Trenches"—CHARLES B. WRIGHT, M.D., Minneapolis, Trustee of the American Medical Ass'n.

Election of Chairman for 1938.

#### Afternoon Program

5. "Problems of Administering the Afflicted Child Law"—HON. GEORGE T. GUNDRY, Auditor General of Michigan.
6. "What's Going On In Michigan"—L. FERNALD FOSTER, M.D., Bay City, Secretary of the M.S.M.S.  
Discussants: John J. McCann, M.D., Ionia; A. F. Bliesmer, M.D., St. Joseph.
7. Round Table Discussion on Preventive Medicine.  
Chairman: DON W. GUDAKUNST, M.D., State Health Commissioner.  
Cancer: O. A. Brines, M.D., Detroit.  
Immunization: Edgar Martmer, M.D., Detroit.  
Maternal Health: A. M. Campbell, M.D., Grand Rapids.  
Mental Hygiene: H. A. Luce, M.D., Detroit.  
Preventive Medicine: L. O. Geib, M.D., Detroit.  
Syphilis: R. S. Breakey, M.D., Lansing.  
Tuberculosis: B. H. Douglass, M.D., Northville.

The Editors' Conference, comprising the editors of medical bulletins in Michigan, was held on the same day as the County

Secretaries' Conference, in Lansing, January 23, 1938. A round-table discussion relative to problems of editing and managing a Bulletin, what material is best suited for publication, and suggestions for improvements and refinements were thoroughly discussed.

County medical societies having bulletins, together with the names of their editors, include:

Calhoun—Wilfrid Haughey, M.D., Battle Creek.  
Cass-Berrien—A. F. Bliesmer, M.D., St. Joseph.  
Bay—W. G. Gamble, M.D., Bay City.  
Genesee—T. S. Conover, M.D., Flint.  
Ingham—H. C. Rockwell, M.D., Lansing.  
Jackson—H. W. Porter, M.D., Jackson.  
Kalamazoo—L. W. Gerstner, M.D., Kalamazoo.  
Kent—John M. Whalen, M.D., Grand Rapids.  
Muskegon—R. H. Holmes, M.D., Muskegon.  
Oakland—R. G. Tuck, M.D., Pontiac.  
Wayne—(*Detroit Medical News*—weekly)—D. I. Sugar, M.D., Detroit.  
Washtenaw—Wm. M. Brace, M.D., Ann Arbor.

The following is the attendance roll of the Secretaries' Conference, Olds Hotel, Lansing, Sunday, January 23, 1938:

*Secretaries of County Societies.*—Allegan: Dr. M. B. Beckett, Allegan; Alpena: Dr. H. Kessler, Alpena; Bay: Dr. A. L. Ziliak, Bay City; Berrien: Dr. A. F. Bliesmer, St. Joseph; Branch: Dr. F. S. Leeder, Coldwater; Calhoun: Dr. Wilfrid Haughey, Battle Creek; Clinton: Dr. T. Y. Ho, St. Johns; Eaton: Dr. T. Wilensky, Eaton Rapids; Hillsdale: Dr. E. G. McGavran, Hillsdale; Ingham: Dr. R. J. Himmelberger, Lansing; Ionia-Montcalm: Dr. John J. McCann, Ionia; Jackson: Dr. Horace Wray Porter, Jackson; Kalamazoo: Dr. Louis W. Gerstner, Kalamazoo; Lenawee: Dr. Esli T. Morden, Adrian; Livingston: Dr. D. C. Stephens, Howell; Luce: Dr. C. D. Hart, Newberry; Macomb: Dr. R. F. Salot, Mt. Clemens; Manistee: Dr. C. L. Grant, Manistee; Muskegon: Dr. Leland E. Holly, Muskegon; Newaygo: Dr. W. H. Barnum, Fremont; Oakland: Dr. O. O. Beck, Birmingham; Oceana: Dr. N. W. Heysett, Hart; O.M.C.O.R.O.: Dr. C. G. Clippert, Grayling; St. Clair: Dr. Jacob H. Burley, Port Huron; St. Joseph: Dr. J. W. Rice, Sturgis; Tuscola: Dr. Robert R. Howlett, Caro; Washtenaw: Dr. Wm. M. Brace, Ann Arbor; Wayne: Dr. John A. Hookey, Detroit; Wexford: Dr. Benton A. Holm, Cadillac.

*Presidents of County Societies.*—Barry: Dr. Gordon F. Fisher, Hastings; Bay: Dr. C. L. Hess, Bay City; Ingham: Dr. Dana M. Snell, Lansing; Ionia-Montcalm: Dr. R. R. Whitten, Ionia; Jackson: Dr. John D. VanSchoick, Hanover; Kent: Dr. Abel J. Baker, Grand Rapids; St. Clair: Dr. Charles A. Macpherson, St. Clair; Wayne: Dr. C. E. Umphrey, Detroit.

*Officers and Councilors.*—Dr. Henry Cook, Flint, President; Dr. Henry A. Luce, Detroit, President-Elect; Dr. L. Fernald Foster, Bay City, Secretary; Dr. P. R. Urmston, Bay City, Chairman of The Council; Dr. J. E. McIntyre,

## SOCIETY ACTIVITY

Lansing; Dr. F. T. Andrews, Kalamazoo; Dr. T. F. Heavenrich, Port-Huron; Dr. George A. Sherman, Pontiac; Wm. J. Burns, Lansing, Executive Secretary.

*Guests.*—Senator Earl W. Munshaw, Grand Rapids; Representative Elizabeth L. Belen, Lansing; Representative Vernon J. Brown, Mason; Dr. R. E. Pleune, Lansing; Dr. W. G. Gamble, Bay City; Dr. Roy C. Perkins, Bay City; Dr. M. R. Slattery, Bay City; Dr. L. O. Keagle, Battle Creek; Dr. Stanley T. Lowe, Battle Creek; Dr. R. C. Winslow, Battle Creek; Dr. T. S. Conover, Flint; Dr. F. B. Miner, Flint; Dr. Donald Fleming, Hillsdale; Dr. L. G. Christian, Lansing; Dr. A. W. Newitt, Lansing; Dr. H. C. Rockwell, Lansing; Dr. John F. Sander, Lansing; Dr. Lill'an R. Smith, Lansing; Dr. Robert J. Armstrong, Kalamazoo; Dr. J. D. Brook, Grandville; Dr. J. D. Miller, Grand Rapids; Dr. E. W. Caster, Mt. Clemens; Dr. J. D. Bruce, Ann Arbor; Dr. B. W. Carey, Detroit; Dr. Richard M. Johnson, Detroit; Dr. Paul A. Klebba, Detroit; Dr. Gregory Moore, Cadillac; James A. Bechtel, Detroit; Theodore J. Werle, Lansing; Frank C. Bateman, Pontiac; Harry R. Lipson, Detroit.

Those in attendance at the County Bulletin Editors' Conference, Olds Hotel, Lansing, Sunday, January 23, 1938:

*County Bulletin Editors.*—Bay: Dr. W. G. Gamble, Bay City; Calhoun: Dr. Wilfrid Haughey, Battle Creek; Cass-Berrien: Dr. A. F. Bliesmer, St. Joseph; Genesee: Dr. T. S. Conover, Flint; Ingham: Dr. H. C. Rockwell, Lansing; Jackson: Dr. Horace Wray Porter, Jackson; Kalamazoo: Dr. L. W. Gerstner, Kalamazoo.

*Guests.*—Dr. P. R. Urmston, Bay City, Chairman of The Council; Dr. L. Fernald Foster, Bay City, Secretary; Dr. C. L. Hess, Bay City; Dr. A. L. Zihak, Bay City; Dr. Robert S. Breakey, Lansing; Dr. Leland E. Holly, Muskegon; Dr. Wm. M. Brace, Ann Arbor; James A. Bechtel, Detroit; Harry R. Lipson, Detroit; Wm. J. Burns, Lansing, Executive Secretary.

## SECOND ANNUAL GOLF TOURNAMENT

THE day was chilly and the sun flashed intermittently, but sixty physicians enjoyed the Second Annual Golf Tournament of the Michigan State Medical Society at Cascade Hills Country Club, Grand Rapids, on Sunday, September 26, on the occasion of the M.S.M.S. Annual Meeting. The eighteen-hole course was in perfect condition, and the swimming pool looked inviting—when the sun was out; but most of the players satisfied themselves with a shower in the warm recesses of the club-house. The Local Committee, composed of Drs. M. S. Ballard, Leon DeVel, Wm. R. Torgerson, A. V. Wenger and P. W. Bloxsom, worked up the details of the convention so that everything ran smoothly.

During the dinner, prizes were presented by Dr. M. S. Ballard, chairman of the Arrangements Committee, who also announced the individual scores:

## GOLF SCORES—1937

### Championship Flight

Scratch to 10, inclusive

	G	H	Net
Harvey Hansen, Battle Creek.....	96	10	86
R. H. Baribeau, Battle Creek.....	91	10	81
John M. Murphy, Detroit.....	78	5	73
W. G. Reid, Detroit.....	82	8	74
K. S. McIntyre, Hastings.....	90	4	86
J. H. Albers, E. Lansing.....	77	5	72
R. E. Balch, Kalamazoo.....	88	7	81
R. J. Hubbell, Kalamazoo.....	89	10	79
T. E. Hoffman, Vassar.....	80	5	75
F. C. Bandy, Sault St. Marie.....	84	8	76
M. J. Holdsworth, Grand Rapids.....	77	4	73
A. A. Humphrey, Battle Creek.....	84	10	74

### First Flight

11 to 15, inclusive

E. J. Rennell, Traverse City.....	95	15	80
Alfred Dean, Grand Rapids.....	93	14	79
R. B. Harkness, Hastings.....	88	13	75
R. C. Jamieson, Detroit.....	88	15	73
R. G. Finnie, Hastings.....	100	16	84
K. H. Johnson, Lansing.....	97	15	82
M. S. Ballard, Grand Rapids.....	98	15	83
M. A. Hoffs, Lake Odessa.....	98	15	83
W. Z. Rundles, Flint.....	83	12	71

### Second Flight

16 to 20, inclusive

R. D. Scott, Flint.....	96	18	78
G. D. Houghton, Caledonia.....	101	18	83
C. L. Hirwas, Marquette.....	83	16	67
A. E. Catherwood, Detroit.....	93	18	75
Wm. R. Clinton, Detroit.....	93	17	76
P. W. Bloxsom, Grand Rapids.....	96	19	77
T. R. Kemmer, Grand Rapids.....	96	18	78

### Third Flight

21 to 27, inclusive

E. F. Sladek, Traverse City.....	104	25	79
J. A. Hookey, Detroit.....	108	27	81
Harold D. Crane, Grand Rapids.....	94	21	73
A. R. Dickson, Battle Creek.....	104	24	80
O. A. Brines, Detroit.....	97	21	76
R. F. Webb, Grand Rapids.....	95	23	72
T. C. Irwin, Grand Rapids.....	95	23	72
H. A. Luce, Detroit.....	101	27	74
L. W. Shaffer, Detroit.....	94	21	73
Ward S. Ferguson, Grand Rapids.....	106	27	79
Geo. H. Southwick, Grand Rapids.....	100	25	75
P. L. Thompson, Grand Rapids.....	104	23	81
H. F. Dibble, Detroit.....	90	22	68
A. J. Baker, Grand Rapids.....	107	22	85
Philip A. Riley, Jackson.....	99	27	72
R. H. Denham, Grand Rapids.....	98	27	71
M. E. Danforth, Detroit.....	102	27	75
C. F. Snapp, Grand Rapids.....	101	25	76
R. E. Spinks, Newberry.....	98	22	76

### Fourth Flight

28 to 30, inclusive

Leon M. Bogart, Flint.....	111	30	81
John Wenger, Coopersville.....	116	30	86
S. C. Mason, Menominee.....	110	28	82
C. K. Valade, Detroit.....	147	30	117
Martin H. Hoffmann, Detroit.....	108	30	78
W. D. Barrett, Detroit.....	109	30	79
C. D. Benson, Detroit.....	104	30	74
G. C. Penberthy, Detroit.....	117	30	87
W. E. Barstow, St. Louis.....	120	30	90
S. W. Insley, Detroit.....	104	30	74
C. V. Crane, Grand Rapids.....	97	30	67
Wm. J. Butler, Grand Rapids.....	100	30	70
J. J. O'Meara, Jackson.....	92	30	62

## SOCIETY ACTIVITY

### CHAMPIONSHIP OF THE FIELD

#### PRIZES

#### DONORS

#### WINNERS

Low Gross President's Trophy .....	Dr. H. E. Perry, Newberry.....	} M. J. Holdsworth, Grand Rapids (77)
and One year's possession of Penberthy Trophy .....	Dr. G. C. Penberthy, 1515 David Whitney Bldg., Detroit..... (Past-President, M.S.M.S.)	
Low Net Packard Electro Shaver.....	Kent Co. Medical Society (President, A. B. Smith, Metz Bldg., Grand Rapids) .....	J. J. O'Meara, Jackson (62)

### FIVE FLIGHTS

#### Championship Flight (Scratch to 10, incl.)

Low Gross Golf Bag .....	Dr. J. D. Brook, Grandville.....	J. H. Albers, Lansing Delegate to the A.M.A.
Low Net Globe of World .....	Dr. L. Fernald Foster, 328 Shearer Bldg., Bay City .....	John M. Murphy, Detroit (Secretary, M.S.M.S.)

#### First Flight (11 to 15, incl.)

Low Gross Medical Bag .....	Dr. J. H. Dempster, 5761 Stanton, Detroit .....	W. Z. Rundles, Flint (Editor, JOURNAL, M.S.M.S.)
Low Net Set Poker Chips.....	Dr. T. F. Heavenrich, Port Huron.....	R. C. Jamieson, Detroit (Vice Chairman, The Council)

#### Second Flight (16 to 20, incl.)

Low Gross Cocktail Set .....	Dr. A. B. Smith, Metz. Bldg., Grand Rapids .....	C. L. Hirwas, Marquette (President, Kent Co. Med. Soc.)
Low Net Travel Kit .....	Dr. P. A. Riley, 500 S. Jackson St., Jackson .....	A. E. Catherwood, Detroit (Vice-Speaker, House of Dele.)

#### Third Flight (21 to 27, incl.)

Low Gross Dispensing Set .....	Dr. Frank E. Reeder, 808 Genesee Bank Bldg., Flint .....	H. F. Dibble, Detroit (Speaker, House of Delegates)
Low Net Travel Kit .....	Bill Mennen .....	R. H. Denham, Grand Rapids The Mennen Company, Newark, N. J.

#### Fourth Flight (28 to 30)

Low Gross Pen Desk Set.....	Dr. Henry Cook, 400 Sherman Bldg., Flint .....	C. V. Crane, Grand Rapids (President-Elect, M.S.M.S.)
Low Net Travel Kit .....	Bill Mennen .....	W. J. Butler, Grand Rapids The Mennen Co., Newark, N. J.

### MATURITY EVENT

Limited to players 50 years and over

Low Gross Dempster Trophy .....	Mr. J. R. Bruce, Bruce Pub. Co., 2642 University Ave., St. Paul, Minn.....	R. E. Balch, Kalamazoo (Publisher, THE JOURNAL)
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### KICKERS HANDICAP

First Prize Electric Clock .....	Dr. P. R. Urmston, Davidson Bldg., Bay City .....	A. R. Dickson, Battle Creek (Chairman, The Council)
Second Prize Copper Ice Bucket with Tongs.....	Bill Burns, 2020 Olds Tower, Lansing....	J. A. Hookey, Detroit (Executive Secretary, M.S.M.S.)



## SOCIETY ACTIVITY

### REPORT OF AUDITORS FOR 1937

WE HAVE made an examination of the balance sheet of MICHIGAN STATE MEDICAL SOCIETY as at December 24, 1937, and of the statements of income and expense and net worth for the year ended at that date. In connection therewith, we examined or tested accounting records of the Society and other supporting evidence and obtained information and explanations from the Executive Secretary and other employees; we also made a general review of the accounting methods and of the operating and income accounts for the year, but we did not make a detailed audit of the transactions.

In addition to our examination of the balance sheet and of the statements of income and expense and net worth, we made certain test checks of the records of the cash transactions and other data supporting the operating and income accounts.

The Society was organized as a corporation not for pecuniary profit on September 17, 1910 under the laws of the State of Michigan. It is affiliated with the American Medical Association and charters county medical societies within the State of Michigan. The purpose of the Society is the federation and protection of the medical profession and the extension of medical knowledge. In the furtherance of these purposes, the Society publishes THE JOURNAL of the Michigan State Medical Society.

#### Balance Sheet

The balance sheet as at December 24, 1937, included herein, has been prepared on the basis outlined in this report. A summary of the assets and liabilities at December 24, 1937, follows:

Assets	
Cash .....	\$ 1,473.45
Notes and accounts receivable.....	920.48
Inventory .....	834.00
Securities—at cost less reserve.....	28,978.00
Deferred charges .....	76.46
	<u>\$32,282.39</u>
Liabilities	
Note payable .....	\$ 3,500.00
Accounts payable .....	2,855.53
Liability for funds administered.....	39.37
Unearned income .....	2,074.50
Reserve for Medico-Legal Defense Fund.....	12,048.60
Net worth .....	11,764.39
	<u>\$32,282.39</u>

Notes receivable for dues represent the uncollected portions of notes taken in settlement of 1931, 1932 and 1933 dues. Collections on these notes during the year ended December 24, 1937 amounted to \$7.50.

Accounts receivable for advertising, reprints and cuts were analyzed as to date of charge, as follows:

Date of Charge	Dec. 24, 1937	
	Amount	Per cent
October, November and December.....	\$ 981.51	70.59%
July, August and September.....	100.45	7.23
January to June, inclusive.....	10.25	.74
Prior to January 1st.....	298.08	21.44
TOTAL .....	\$1,390.29	100.00%

The balances due from county societies represent dues collected for the Society by two county societies and impounded in depository banks. As funds are released by the banks the Society's share will be forwarded by the county societies. During the year a payment of \$16.61 was received on one of these accounts.

Based upon our analysis of the notes and accounts and conference with the Executive Secretary as to their collectibility, it is our opinion that the

reserve of \$625.00 is sufficient to care for losses anticipated at the date of this report.

The inventory represents 278 sets of the "Medical History of Michigan," a two-volume work published by the Society several years ago. During the year 1936 the inventory value was reduced to \$3.00 a set, at which value the histories are included in the inventory at December 24, 1937.

A schedule of securities owned is included in a later section of this report, which sets forth the par value, cost and quoted market values at December 24, 1937. (Part of the M.S.M.S. treasurer's report to be published in the March Journal.) Unlisted securities have been valued from information furnished by brokers as to the current bid and sale prices. During the year \$4,000.00 of principal amount of bonds of the American Telephone & Telegraph Company owned by the Society were called at a premium and other bonds in the principal amount of \$18,000.00 were sold at a loss. Practically all of the proceeds from the redemption and sale of bonds were reinvested in other securities. The net loss on the sale of securities in the General Fund and Medico-Legal Defense Fund during the year in the amount of \$5,949.76 was partially offset by a reduction of \$3,492.00 in the reserve to reduce securities to quoted market values at December 24, 1937. The net effect of these transactions in the two funds is summarized as follows:

	Total	General Fund	Medico-Legal Defense Fund
Loss on sale of securities.....	\$5,949.76	\$3,817.33	\$2,132.43
Change in reserve.....	3,492.00	3,578.50	86.50
Net Loss on Securities Transactions .....	\$2,457.76	\$ 238.83	\$2,218.93

Matured coupons on bonds not in default have been included at par value, but no other accrued interest is included in the balance sheet.

Deferred charges, as shown in the balance sheet, represent costs incurred prior to December 24, 1937 in connection with advertising for the 1938 annual meeting. In our opinion, such items are properly chargeable to future operations.

As far as we could ascertain, provision has been made for all ascertained liabilities at December 24, 1937.

The note payable to the Lansing National Bank is dated December 24, 1937, is due January 25, 1938 and is secured by \$6,000.00 principal amount of bonds of the General Fund pledged as collateral.

We have included herein a statement in summarized form of the receipts and disbursements of the fund of the Joint Committee on Public Health Education, which fund has been administered by the Society in the past. In accordance with action of the Executive Committee of the Council of the Society, the balance remaining in this fund was turned over to the Joint Committee during the month of December, 1937.

Collections of 1938 dues and overpayments of 1937 dues, which were not returned to county societies, have been shown as unearned income and, in our opinion, represent income applicable to the ensuing year, except that portion which will be credited to the Medico-Legal Defense Fund when it is determined what portion of 1938 dues shall be allocated to that fund.

A separate schedule included herein shows in summary the changes in the Medico-Legal Defense Fund. Excluding sales and purchases of securities, disbursements of this fund exceeded receipts in the amount of \$1,717.31. Losses on sale and reduction in value of securities decreased this fund

## SOCIETY ACTIVITY

an additional amount of \$2,218.93. At December 24, 1937 the quoted market value of securities allocated to the Medico-Legal Defense Fund was somewhat in excess of the reserve.

Surety bonds on officials and an employee of the Society at December 24, 1937 were as follows: Medical Secretary, \$15,000.00; Treasurer, \$35,000.00; Executive Secretary, \$5,000.00; Bookkeeper, \$5,000.00.

### Income and Expense Statement

A statement of income and expense for the fiscal year ended December 24, 1937 is included herein, prepared in comparison with the income and expense statement for the prior year. A comparative statement of expenses for the two years is also included.

The increase in income resulting from a slightly larger membership was more than offset by increased expenses resulting from enlarged activities of the Society.

Net income from publishing *THE JOURNAL*, which is not charged with any part of the expenses of the executive office, was approximately the same as during the preceding year.

### Scope of Examination

The scope and nature of our examination and the extent of our tests of detail transactions are outlined in the following comments:

The demand deposit was verified by reconciliation of the amount reported by the depository bank to the amount shown herein. Cash on hand was counted on the morning of December 27, 1937. Recorded cash receipts for six months of the year under review were traced to the deposits shown by the bank statements on file. The recorded cash disbursements for three months of the year were compared with canceled bank checks, invoices and other memoranda. To the extent of the tests made no irregularities were disclosed.

Notes receivable were inspected by us. Ac-

counts receivable were in agreement with trial balances of the individual accounts. We did not correspond with any of the debtors to confirm the correctness of the book entries.

Securities were inspected on December 24, 1937 and market quotations were obtained to ascertain their approximate market value at that date. Purchases and sales of securities were supported with broker's memoranda.

The note payable to the Lansing National Bank was verified by correspondence with the bank. We did not correspond with the other creditors to verify the liabilities of the Society, but we reviewed the transactions entering into the accounts of the Joint Committee on Public Health Education and of the Medico-Legal Defense Fund.

In addition to the tests heretofore outlined, we tested the amount of dues collected by comparison with the membership records and by examination of unused membership certificates. Interest received was verified by inspection of coupons and by verification from the bank concerning bonds held by that institution as collateral security for notes payable. Tests were made of advertising income by comparison of billings for advertising with space used in three issues of *THE JOURNAL*. We also reviewed the items charged to the major expense accounts of the year.

### Opinion

In our opinion, based upon our examination, the accompanying balance sheet and related statements of income and expense and net worth fairly present the financial position of the Society at December 24, 1937 and the results of its operations for the year ended at that date. Further, it is our opinion that the statements have been prepared in accordance with accepted principles of accounting and on a basis consistent with the preceding year.

January 4, 1938.

ERNST AND ERNST  
Certified Public Accountants

### BALANCE SHEET December 24, 1937

Assets		
Cash		
Demand deposit .....	\$ 1,465.83	
Office cash fund .....	7.62	\$ 1,473.45
Notes and Accounts Receivable		
Notes receivable for dues—past due .....	\$ 80.00	
Accounts receivable:		
For advertising, reprints and cuts .....	\$ 1,390.29	
From county societies for dues .....	75.19	1,465.48
	\$ 1,545.48	
Less reserve for doubtful .....	625.00	920.48
Inventory		
"Medical History of Michigan" .....		834.00
Securities		
Stocks and bonds—at cost—Note A .....	\$39,261.25	
Less reserve to reduce to quoted market value .....	10,425.75	\$28,835.00
Unclipped matured coupons on bonds not in default .....	142.50	28,978.00
Deferred Charges		
Expense in connection with 1938 annual meeting .....		76.46
		\$32,282.39
Liabilities		
Note Payable		
To Lansing National Bank—secured—Note A .....		\$ 3,500.00
Accounts Payable		
For current expenses, etc. ....	\$2,853.53	
Advertiser's credit balance .....	2.00	2,855.53
Liability for Fund Administered		
Couzens' Foundation .....		39.37
Unearned Income		
Dues for the year 1938 .....		2,074.50
Reserve		
For Medico-Legal Defense Fund .....		12,048.60
Net Worth		
Balance at December 27, 1936 .....	\$19,738.92	
Net decrease for the year ended December 24, 1937 .....	7,974.53	11,764.39
		\$32,282.39

Note A—Securities in the principal amount of \$6,000.00 and having a quoted market value of \$6,042.50 were pledged to the Lansing National Bank as collateral security for a note payable.

## SOCIETY ACTIVITY

### INCOME AND EXPENSE STATEMENT FISCAL YEAR ENDED DECEMBER 24, 1937

<b>Income</b>	
Membership fees .....	\$38,953.50
Less: Allocated to Journal income for subscriptions .....	5,842.93
Allocated to Medico-Legal Defense Fund.....	1,949.07
	<u>\$ 7,792.00</u>
<b>Net Income from Membership Fees.....</b>	<b>\$31,161.50</b>
Income from Journal—as shown by schedule....	1,206.85
Interest received .....	959.76
Miscellaneous income .....	2.50
	<u>Total Income .....</u>
	<u>\$33,330.61</u>
<b>Expenses—as shown by schedule</b>	
Administrative and general office.....	\$15,232.45
Society activities .....	15,563.75
Committee expenses .....	10,220.92
	<u>\$41,017.12</u>
<b>Other Deductions</b>	
Loss on sale of securities.....	\$ 3,817.33
Adjustment of inventory valuation.....	—0—
Interest paid .....	26.04
Bad accounts charged off or provided for, less recoveries .....	23.15
	<u>\$ 3,866.52</u>
	<u>\$44,883.64</u>
<b>Net Loss or Income.....</b>	<b>\$11,553.03</b>
Less adjustment of reserve to reduce securities of the General Fund to quoted market value..	3,578.50
	<u>Decrease or Increase in Net Worth....</u>
	<u>\$ 7,974.53</u>

### EXPENSES FISCAL YEAR ENDED DECEMBER 24, 1937

<b>Administrative and General</b>	
Secretary's salary .....	\$ 2,400.00
Executive secretary's salary.....	6,000.00
Other office salaries .....	3,652.01
Office rent .....	720.00
Printing, stationery and supplies.....	685.28
Postage .....	639.15
Auditing .....	295.00
Insurance and fidelity bonds.....	185.25
Furniture and equipment purchased.....	138.26
Storage expense .....	—0—
Telephone and telegraph.....	376.42
Unclassified .....	141.08
	<u>\$15,232.45</u>

### Society Activities

Council expenses .....	\$ 2,729.19
Educational expenses .....	3,075.00
Delegates to American Medical Society.....	855.65
Secretaries' conference .....	851.41
Secretaries' letters .....	341.41
Traveling expense .....	1,449.80
Legal expense .....	750.00
Reporting annual meeting .....	115.37
Organization expense .....	3,225.54
Publications .....	1,441.16
Honorarium .....	500.00
Memorial plaque .....	—0—
Sundry society expense.....	539.00
	<u>\$15,873.53</u>

Less revenue from annual meeting in excess of cost thereof.....	309.78
	<u>\$15,563.75</u>

### Committee Expenses

Legislative committee .....	\$ 7,443.87
Postgraduate conference .....	1,631.62
Contribution to Joint Committee on Public Health Education .....	—0—
Economics committee .....	170.07
Maternal welfare committee.....	173.59
Public relations committee .....	70.59
Cancer committee .....	289.17
Preventive medicine committee.....	120.49
Goitre committee .....	—0—
Sundry other committees .....	321.52
	<u>\$10,220.92</u>

Total .....\$41,017.12

### INCOME AND EXPENSES—"THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY" FISCAL YEAR ENDED DECEMBER 24, 1937

<b>Income</b>	
Subscriptions from members .....	\$ 5,842.93
Other subscriptions .....	121.53
Advertising .....	9,548.11
Reprint sales .....	2,029.08
Journal cuts .....	259.07
	<u>\$17,800.72</u>
<b>Expenses</b>	
Editor's salary .....	\$ 3,000.00
Editor's expense .....	600.00
Printing and mailing .....	9,965.04
Cost of reprints .....	1,597.60
Discount and commissions on advertising.....	1,181.23
Postage .....	250.00
	<u>\$16,593.87</u>
<b>Net Income .....</b>	<b>\$ 1,206.85</b>

### RECEIPTS AND DISBURSEMENTS— JOINT COMMITTEE ON PUBLIC HEALTH EDUCATION FISCAL YEAR ENDED DECEMBER 24, 1937

Balance Due Joint Committee—December 27, 1936.....		\$ 992.01
<b>Receipts</b>		
The Detroit News—for articles published .....	\$ 999.96	
Contribution: Children's Fund of Michigan.....	3,000.00	3,999.96
<b>Disbursements</b>		
Salaries:		\$ 4,991.97
Mabel Kelly .....	\$ 1,200.00	
Herman Riecker, M. D.....	900.00	\$ 2,100.00
Don E. Lyons, M. D.....	100.00	
Additional expense in connection with "Cancer" booklet published in 1936 in conjunction with Cancer Committee of the Michigan State Medical Society..	43.12	
Miscellaneous expenses paid on order of the Joint Committee.....	988.08	
Remitted to the Joint Committee.....	1,760.77	4,991.97
Balance Due Joint Committee—December 24, 1937.....		<u>\$ —0—</u>

### MEDICO-LEGAL DEFENSE FUND FISCAL YEAR ENDED DECEMBER 24, 1937

Balance—December 27, 1936 .....		\$15,984.84
<b>Disbursements</b>		
Douglas, Barbour, Desenberg & Purdy—legal services.....	\$ 3,146.98	
Wm. J. Stapleton, Jr.—salary .....	999.96	
Miscellaneous .....	77.85	\$ 4,224.79
<b>Receipts</b>		
Allocation of portion of dues income .....	\$ 1,949.07	
Interest received on securities .....	558.41	2,507.48
		<u>\$1,717.31</u>
Loss on securities sold.....		\$ 2,132.43
Increase in allowance to reduce securities to quoted market value.....		86.50
		<u>2,218.93</u>
Balance—December 24, 1937 .....		<u>\$12,048.60</u>

At December 29, 1937, the quoted market value of the securities allocated to the Medico-Legal Defense Fund exceeded the balance of this reserve account by the amount of \$990.90.

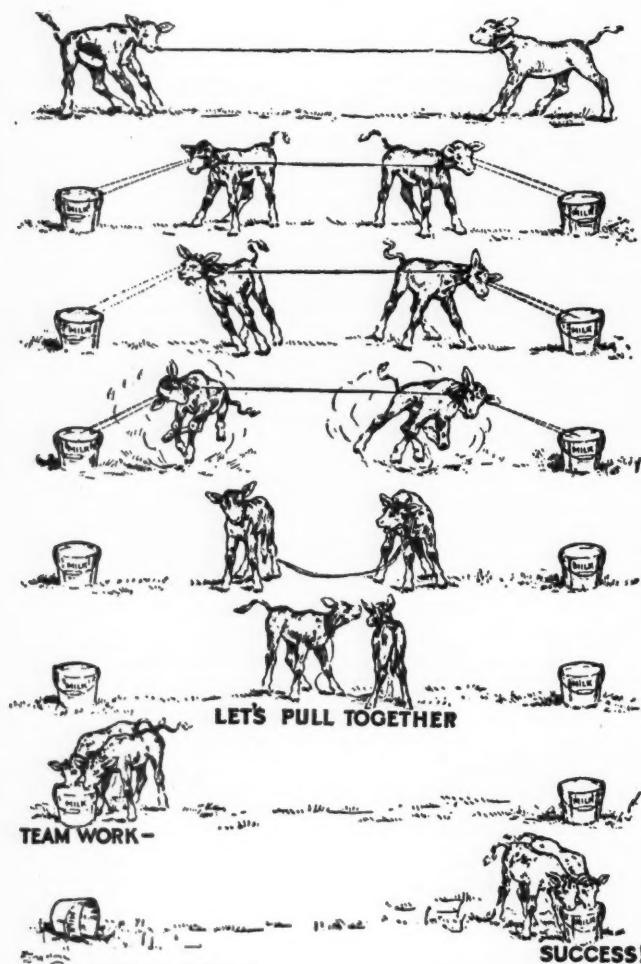


## COUNTY SOCIETIES

### COUNCIL AND COMMITTEE MEETINGS

1. *Friday, January 7, 1938*—Advisory Committee to Parole Commission—State Prison of Southern Michigan, Jackson—11:00 a. m.
2. *Friday, January 7, 1938*—Advisory Committee on Tuberculosis Control—Olds Tower, Lansing—2:30 p. m.
3. *Sunday, January 9, 1938*—Preventive Medicine Committee—Hotel Durant, Flint—10:00 a. m.
4. *Sunday, January 9, 1938*—Advisory Committee on Syphilis Control—Hotel Durant, Flint—10:00 a. m.
5. *Tuesday, January 11, 1938*—Advisory Committee on Occupational Diseases—Hotel Statler, Detroit—6:30 p. m.
6. *Wednesday and Thursday, January 12-13, 1938*—Mid-Winter Meeting of The Council—Hotel Statler, Detroit.
7. *Saturday, January 22, 1938*—Public Relations Committee—Hotel Olds, Lansing—6:30 p. m.

### TEAMWORK



© By courtesy Armour and Company

## COUNTY SOCIETIES

### BARRY COUNTY

THOMAS H. COBB, M.D.

#### Secretary

At the regular meeting of the Barry County Medical Society, December 9, 1937, the following officers were elected for the year 1938:

President—Dr. G. F. Fisher, Hastings.  
 Secretary and Treasurer—Dr. T. H. Cobb, Woodland.  
 Delegate—Dr. Robert Harkness, Hastings.  
 Alternate Delegate—Dr. H. S. Wedel, Freeport.

### BAY COUNTY

A. L. ZILIAK, M.D.

#### Secretary

President A. D. Allen was host to the members and guests of the Bay County Medical Society at the Bay City Country Club for the annual meeting, Wednesday, December 15.

Dr. Allen provided a moose and venison dinner, the result of a recent hunting trip to the Canadian wilds.

The Michigan State Medical Society was represented by President Henry Cook of Flint, and Executive Secretary Wm. J. Burns, also Dr. P. R. Urmston, Chairman of the Council, and Dr. L. Fernald Foster, Secretary.

The following officers were elected for the ensuing year:

President—Dr. C. L. Hess, Bay City.  
 President-elect—Dr. L. Fernald Foster, Bay City.  
 Secretary and Treasurer—Dr. A. L. Ziliak, Bay City.  
 Delegate—Dr. R. C. Perkins, Bay City.  
 Alternate—Dr. A. D. Allen, Bay City.  
 Censor—Dr. R. N. Sherman, Bay City.  
 Medico-Legal Advisor—Dr. E. A. Witwer, Bay City.

The secretary's annual report showed an active membership of seventy-three, with two Emeritus and two Associate members.

The following programs were announced for January:

January 12—"Pneumonia." Dr. Gordon Myers, Detroit.

January 26—"Tuberculosis." Dr. John Barnwell, Ann Arbor.

Dr. Allen proved to be a delightful host at the annual meeting and continued the long custom of the society, whereby the retiring president provides the annual banquet.

### BERRIEN COUNTY

A. F. BLIESMER, M.D.

#### Secretary

The newly elected officers of the Berrien County Medical Society for 1938 are:

President—Dr. Harry Kok, Benton Harbor.  
 Vice President—Dr. J. W. Gunn, Watervliet.  
 Secretary and Treasurer—Dr. A. F. Bliesmer, St. Joseph.  
 Delegate—Dr. Wm. Ellet, Benton Harbor.  
 Alternate—Dr. Fred Henderson, Niles.

## COUNTY SOCIETIES

### CALHOUN COUNTY

WILFRID HAUGHEY, M.D.

*Secretary*

The following officers were elected at the annual meeting of the Calhoun County Medical Society:

President—Dr. Joseph E. Rosenfeld, Battle Creek.  
Secretary—Dr. Wilfrid Haughey, Battle Creek.  
Delegates—Dr. Harvey Hansen, Battle Creek, and Dr. A. T. Hafford, Albion.  
Alternates—Dr. William Dugan, Battle Creek, and Dr. Norman H. Amos, Battle Creek.

### DELTA COUNTY

G. W. BENSON, M.D.

*Secretary*

At the annual meeting of the Delta County Medical Society held December 16, the following officers were elected for the year 1938:

President—Dr. W. A. Lemire, Escanaba.  
Vice President—Dr. O. S. Hult, Gladstone.  
Secretary—Dr. G. W. Benson, Escanaba.  
Delegate to State Convention—Dr. O. S. Hult.  
Alternate—Dr. G. W. Moll.  
Trustee of Society—Dr. J. D. Mitchell, Gladstone.

### DICKINSON-IRON COUNTY

W. H. HURON, M.D.

*Secretary*

The following officers were elected at the annual meeting of the Dickinson-Iron County Medical Society for 1938:

President—L. E. Irvine, M.D., Iron River.  
Vice President—R. E. Hayes, M.D., Sagola.  
Secretary—W. H. Huron, M.D., Iron Mountain.

### GENESEE COUNTY

C. W. COLWELL, M.D.

*Secretary*

The following are the officers of the Genesee County Medical Society for the year 1938:

President—Dr. Arthur McArthur, Flint.  
President-elect—Dr. Leon Bogart, Flint.  
Secretary—Dr. C. W. Colwell, Flint.  
Treasurer—Dr. Vaughn Morrissey, Flint.  
Medical Legal Officer—Dr. H. E. Randall, Flint.  
Delegates—Dr. F. E. Reeder, Flint; Dr. Robert Scott, Flint; Dr. Donald Brasie, Flint.  
Alternate Delegates—Dr. R. S. Halligan, Flint; Dr. Donald Wright, Flint; Dr. A. Dale Kirk, Flint.

### GRAND TRAVERSE-LEELANAU-BENZIE COUNTY

E. F. SLADEK, M.D.

*Secretary*

The annual meeting of the Grand Traverse-Leelanau-Benzie County Medical Society was held at the Park Place Hotel on December 7, 1937.

Thirty-one members and guests sat down to a banquet provided by the retiring president, Dr. Dwight Goodrich.

During the dinner hour we were enjoyably entertained by Dr. J. W. Moore of Flint who sang four songs: "The Open Road" by Ambrose; "Homing" by Del Riego; "Star" by Roger, and "The End of a Perfect Day" by Carrie Jacobs Bond.

The Secretary-Treasurer's report was read.

The following officers were elected:

President—Dr. Mark Osterlin, Traverse City.  
Vice President—Dr. Frederick Trautman, Frankfort.  
Secretary and Treasurer—Dr. C. E. Lemen, Traverse City.  
Medico-Legal Advisor—Dr. Fred G. Swartz, Traverse City.

Dr. Henry Cook, president of the Michigan State Medical Society, was then welcomed as a most honored guest and spoke to us on "Unity in Medicine," particularly pointing out the much greater demands that are being made upon our profession and emphasizing coöperative and organized study and activity on the problems of governmental and socialized medicine, with due care given to preventive medicine. Dr. Cook insisted that we as a profession must pay especial attention to the problem of syphilis, because of the governmental campaign of lay education relative to this disease.

Dr. M. J. Holdsworth, of Grand Rapids, then gave us a very fine talk on "Gonorrhea in the Male," particularly emphasizing the question of when is the patient cured, and insisting that these patients must be treated for longer periods than is the general custom at the present time.

Dr. Leon M. Bogart, of Flint, gave a very illuminating and instructive talk on "Conditions Simulating an Acute Condition of the Abdomen," fearlessly emphasizing the various conditions spoken of by examples of mistakes which he had observed and made in his many years of practice. It was a personal talk of experiences and consequently far more impressionable. He also gave a talk on "The Use of Urea in the Treatment of Indolent Wounds," which was of a very practical nature.

A rising vote of thanks was given to our retiring president for this wonderful dinner and program which he provided, and to our guests who drove a long way to put on the program.

### HILLSDALE COUNTY

E. G. MCGAVRAN, M.D.

*Secretary*

The December meeting was called to order by the president, Dr. W. E. Alleger.

Due to the illness of the treasurer, Dr. Fenton, no treasurer's report was made, the secretary reading a communication from Dr. Fenton. Dr. Poppen and Dr. Green reported upon Dr. Fenton's condition. It was moved that the Society send another bouquet of flowers to Dr. Fenton and the secretary was so instructed.

Dr. Abraham's application for associate membership was presented by the secretary and unanimously voted.

Dr. H. W. Porter, as secretary of the Jackson Society, announced the State Officers Night for Hillsdale and Jackson Counties Tuesday, January 18, 1938, at 5:30 P.M.

The nominating committee composed of Drs. Green, Hanke, and C. T. Bower presented the following report:

President Emeritus—Dr. D. W. Fenton.  
President—Dr. W. E. Alleger.  
Vice President—Dr. A. W. Strom.  
Secretary—Dr. E. G. McGavran.  
Treasurer—Dr. E. A. Martindale.  
Delegate—Dr. L. W. Day.  
Alternate Delegate—Dr. H. F. Mattson.

The report of the committee was accepted. Dr. Van Schoick moved the By-Laws be suspended and the secretary instructed to cast a unanimous ballot for the officers named. Motion was seconded by Dr. M. H. Bowers. Passed.

The Health Department report was given by Dr. McGavran concerning the following items:

## COUNTY SOCIETIES

1. The use of penny postcards for the notification of meetings.

2. The new forms for reporting gonorrhea and syphilis.

3. The plan of counsellor calls upon the medical profession.

4. The matter of registration of the local laboratory.

The Maternity Committee report was given by Dr. A. W. Strom, who reported the progress of the home delivery service. Dr. Strom further presented a letter from the Birth Control League and recommended to the Program Committee that a meeting upon this subject with a talk and demonstration on modern methods of contraception be arranged at the earliest possible convenience and that the Hillsdale County list of physicians ready to render first class service in these matters be limited to those who would in the future take definite postgraduate time to prepare themselves in a good contraceptive clinic.

The report of the committee was approved by motion, seconded and unanimously voted upon.

The X-ray Committee report was given by Dr. M. H. Bowers. The new plan was presented. It was moved by Dr. Mattson that the report of the X-ray Committee be accepted.

Dr. Poppen asked for a meeting with ambulance drivers and that the Program Committee obtain Dr. Maddock from the University of Michigan on this occasion.

### HOUGHTON-KEWEEANAW-BARAGA COUNTY

C. A. COOPER, M.D.

*Secretary*

The Houghton-Keweenaw-Baraga County Medical Society at its annual meeting, held January 4, at the Douglass House, Houghton, elected the following officers:

President—Dr. R. S. Buckland, Baraga.  
President-Elect—Dr. J. R. Kirton, Calumet.  
Secretary—Dr. C. A. Cooper, Hancock.  
Treasurer—Dr. W. T. King, Ahmeek.  
Delegate—Dr. L. E. Coffin, Painesdale.  
Alternate Delegate—Dr. G. M. Waldie, Hancock.  
Members of Board of Ethics—(5 years) Dr. Simon Levin, Houghton; (3 years) Dr. J. B. Quick of Laurium.  
Member of the Council—Dr. W. T. S. Gregg, Calumet.

### INGHAM COUNTY

R. J. HIMMELBERGER, M.D.

*Secretary*

At its December Meeting, the Ingham County Medical Society elected the following officers:

President—Dr. Dana M. Snell.  
President-Elect—Dr. L. G. Christian.  
Secretary—Dr. R. J. Himmelberger.  
Treasurer—Dr. T. I. Bauer.  
Medical Director—Dr. H. Miller.  
Delegates—Dr. R. L. Finch, Dr. C. F. DeVries and Dr. H. W. Wiley.  
Alternate Delegates—Dr. H. M. Smith, Dr. O. B. McGillicuddy, and Dr. W. J. Cameron.

### KENT COUNTY

JOHN M. WHALEN, M.D.

*Secretary*

The thirty-fifth annual dinner meeting of the Kent County Medical Society was held in the English Room of the Rowe Hotel, December 8, 1937, Dr. A. B. Smith, the retiring president, in the chair. One hundred twenty members were present.

Following the dinner and the reading of the annual reports by the various committee chairmen, the Society proceeded with the election of officers for the year 1938. The following officers were elected:

President—Abel J. Baker.  
President-Elect—William R. Torgerson.  
Vice President—Milner S. Ballard.  
Secretary-Treasurer and Editor—John M. Whalen.  
Councillor, Fifth District—Vernor M. Moore.  
Defense League Representative—Joseph B. Whinery.  
Delegates to State Society—A. V. Wenger, C. F. Snapp, P. W. Kniskern, G. H. Southwick, and W. R. Torgerson.  
Alternate Delegates—O. H. Gillett, John Wenger, Paul Willits, Ward Ferguson, and J. F. Whinery.  
Board of Directors—Joseph B. Whinery, Chairman, J. W. Rigerink, A. B. Smith, A. J. Baker, W. R. Torgerson and J. W. Whalen.

### LIVINGSTON COUNTY

DUNCAN C. STEPHENS, M.D.

*Secretary*

The newly elected officers of the Livingston County Medical Society are:

President—Bernard H. Glenn, Fowlerville.  
Secretary—D. C. Stephens, Howell.  
Delegate—H. G. Huntington, Howell.  
Alternate Delegate—J. J. Hendren, Fowlerville.

### MASON COUNTY

C. A. PAUKSTIS, M.D.

*Secretary*

At a meeting of the Mason County Medical Society held Tuesday, January 4, 1938, election of officers took place and the following were elected:

President—Dr. V. J. Blanchette, Custer.  
Secretary and Treasurer—Dr. C. A. Paukstis, Ludington.

Regular meetings will be held on the second Tuesday of each month and annual election will take place in December.

### NEWAYGO COUNTY

W. H. BARNUM, M.D.

*Secretary*

The annual meeting of the Newaygo County Medical Society was held at the Kimbark Inn, December 17, 1937, with dinner served at 7:00 p. m.

The minutes of the last meeting were read and approved by motion.

Dr. Roy H. Holmes, Muskegon, councillor of the 11th District, gave the Society a synopsis of the legal aspect of the medical topics, as following the last State Society.

Dr. T. R. Deur of Grant, and Dr. Samuel Stevens of Bitely, were voted to membership in the society.

The election of officers for the ensuing year resulted as follows:

President—Lambert Geerlings, Fremont.  
Secretary—W. H. Barnum, Fremont.  
Delegate—O. D. Stryker, Fremont.  
Alternate Delegate—W. H. Barnum, Fremont.

The meeting adjourned.

### OTTAWA COUNTY

K. N. WELLS, M.D.

*Secretary*

At the December meeting of the Ottawa County Medical Association the following officers were elected:

President—Dr. Gerritt Kemme, Zeeland.  
Vice President—Dr. Otto Vander Velde, Holland.  
Secretary and Treasurer—Dr. D. C. Bloemendal, Zeeland.



## COUNTY SOCIETIES

### ONTONAGON COUNTY

E. J. EVANS, M.D.  
*Secretary*

The Ontonagon County Medical Society elected the following officers for 1938:

President—F. W. McHugh, M.D., Ontonagon.  
Vice President—W. F. Strong, M.D., Ontonagon.  
Secretary and Treasurer—E. J. Evans, M.D., Ontonagon.  
Delegate—E. J. Evans, M.D., Ontonagon.  
Alternate—C. C. Corkill, M.D., Ontonagon.  
Trustee for three years—S. H. Rubinfeld, M.D., Ontonagon.

### ST. CLAIR COUNTY

JACOB H. BURLEY, M.D.  
*Secretary*

The annual meeting of the St. Clair Medical Association was held Tuesday, December 21, at St. Clair. The following officers were elected:

President—Dr. Charlton H. MacPherson, St. Clair.  
Secretary—Dr. Jacob H. Burley, Port Huron.

### WASHTENAW COUNTY

L. J. JOHNSON, M.D.  
*Secretary*

The December meeting of the Washtenaw County Medical Society was held at the Michigan Union at 6:00 o'clock p. m., December 14, 1937, Dr. Reed Nesbit, president, presiding.

A letter on "Committees and Physicians" from the Michigan State Medical Society was also read.

The Censor Committee presented the applications of Harold W. Riggs, Paul Dirkse and Willis E. Brown. They were unanimously elected to membership.

The report of the Public Relations Committee was read by Dr. McEachern and has been filed in the records. Copies of this report were sent to Lois Heitman, County Agent, and Dr. Foster, secretary of the Michigan State Medical Society.

Dr. Wessinger, in reporting for the Delegates to the State Convention, stated that the activities of the House of Delegates were published in the State Journal. Dr. Wessinger, in reporting as Chairman of the Censor Committee, stated that the Washtenaw County Medical Society had endorsed the new birth reports but had refused to endorse the reports on stillbirth. His reports were unanimously accepted.

Dr. Ross reported for the Red Cross Committee and his report was unanimously accepted.

Dr. Waldron, in reporting for the Nominating

Committee, added the name of Dr. L. J. Johnson to the list of Delegates to the State Society. The alternates were Dr. Williamson, Dr. DeTar and Dr. Fralick. There were no motions made from the floor and it was moved and seconded that the nominations be closed. Carried. Dr. Waldron moved that the Secretary be instructed to cast a ballot for Dr. John W. Kemper, President Elect, Dr. William Brace, secretary and treasurer, Dr. Lee Knoll as Member of the Board of Censors, Doctors Wessinger, Myers and Johnson as Delegates to the State Society and Doctors Williamson, DeTar and Fralick as Alternates. Seconded and unanimously carried.

Dr. Nesbit appointed as Auditing Committee Dr. Rigdon Ratliff and Dr. Hugh Beebe.

At this point in the meeting Dr. Nesbit turned the gavel over to the newly elected president, Dr. Sidney LaFever. In accepting the gavel Dr. LaFever thanked the members of the Society for the honor of his position and asked the Membership if it approved of the business activities being cared for by the Board of Directors so that the regular meetings could devote more time to the scientific program. This met with approval and Dr. Cummings suggested that short reports of the activities of the Board of Directors be read at each meeting.

The scientific part of the program was given by Dr. Walter G. Maddock, who presented a most interesting paper on intestinal obstruction. This timely paper was discussed by Drs. Malcolm, George, and Marshall.

The meeting adjourned at 8:30 o'clock p. m.

### WEXFORD COUNTY

B. A. HOLM, M.D.  
*Secretary*

At our last regular meeting, November 11, 1937, the following officers were elected for the coming year:

President—Dr. L. E. Showalter, Cadillac.  
Secretary and Treasurer—Dr. Benton A. Holm, Cadillac.  
First Vice President—Dr. J. F. Carrow, Marion.  
Second Vice President—Dr. Ralph Hager, Banton.  
Delegate to State Convention—Dr. W. J. Smith, Cadillac.  
Alternate to State Convention—Dr. J. F. Gruber, Cadillac.  
Legal Committee—Dr. J. F. Carrow, Marion, and Dr. G. P. Moore, Cadillac.  
Contract Committee—Dr. L. E. Showalter, Cadillac, and Dr. E. A. McManus, Mesick.  
Finance Committee—Dr. S. C. Moore, Cadillac.  
Program Committee—Dr. B. A. Holm, Dr. M. R. Murphy, and Dr. S. C. Moore, Cadillac.  
Public Relations Committee—Dr. J. H. McCall, Lake City; Dr. Ralph Hager, Manton; Dr. J. F. Carrow, Marion, and Dr. H. C. Buster, Baldwin.  
Membership Committee—Dr. R. W. Albi, Lake City; Dr. E. A. McManus, Mesick, and Dr. B. A. Holm, Cadillac.

## GOLFERS' SPECIAL TO 'FRISCO

for the A.M.A. Convention, June 13-17, 1938

New Orleans—Houston—Galveston—San Antonio—Los Angeles—Del Monte—San Francisco  
Return thru Portland—Seattle—Vancouver—Lake Louise—Banff!

Nine Games of Golf—Sightseeing—Entertainment—a Day with Hollywood Stars

Non-golfers as well as golfers (and their ladies) invited.

YOU OWE YOURSELF THIS WONDERFUL TRIP

Under sponsorship of the American Medical Golfing Association. For itinerary and further information drop a card to Dr. Walt P. Conaway, Pres., AMGA, 1723 Pacific Ave., Atlantic City, N. J.

## WOMAN'S AUXILIARY

President—Mrs. G. C. Hicks, 1009 Wildwood Ave., Jackson, Michigan  
 Sec.-Treas.—Mrs. J. W. Page, 119 N. Wisner St., Jackson, Michigan  
 Press—Mrs. C. B. Fulkerson, 1535 Grand Ave., Kalamazoo, Michigan

### ADVISORY COMMITTEE RECOMMENDATIONS

The Advisory Committee to the Woman's Auxiliary, at their meeting on November 17, 1937, made the following recommendations to the Auxiliary for the following year:

(a) The organization of a local Woman's Auxiliary in each County. Some able and willing doctor's wife to be designated to start the organization. Someone from the State organization who is experienced in organization work should be sent to help her.

(b) That every Auxiliary member be a good Club Woman, belonging to as many community groups as possible, attending meetings regularly, taking to the meetings and bringing from the meetings such information as will help her Auxiliary and her husband's profession. If she is gifted in public speaking, she should speak to the various Woman's Clubs, P.T.A.'s, et cetera.

(c) That every woman inform herself on State Medicine so that she can talk intelligently on this subject and give the medical point of view.

(d) That the members of the Auxiliary become interested as individuals in the Michigan Health League and become members of this organization, also use their influence to interest wives of prominent men in the community in the Michigan Health League.

(e) That the Woman's Auxiliary assist the State Medical Society in its program of public health education, promoting radio health programs sponsored by the medical society and helping develop a conscience minded public toward health problems.

(Mrs. J. W.) ETHEL BOYD PAGE,  
State Secretary-Treasurer.

### HYGEIA AND THE AUXILIARY

The name *hygeia* was taken from Grecian Mythology, being the name of the Mythological Goddess of Health, daughter of Aesculapius, the son of Apollo. The name proves to be well-chosen, and as the patron of the physician is Aesculapius would it not be fitting to think of *hygeia* as the patron of the nurse? Let's give *hygeia* a real chance to nurse back to normal those with wrong ideas about health and healing. For indeed one of the most important problems confronting the physician and his family today is the way the general public accepts the authentic scientific health information of the medical profession against the conjured theories of "Quacks" and "Cults."

One needs only to read the local newspaper or many of our current magazines to realize the need for *hygeia*. It is evident that fantastic mysteries, cults, and cures, as in the days of the medicine man, are not a thing of the past. Your local newspaper patent medicine advertisement reads as though it were written to interest the uncivilized, or those whose minds were still darkened by superstition. I quote: "PenORub—Rubs out pain when children fall, bump or bruise themselves—ease the inflammation, the distress and swelling by cool refreshing PenORub—Fast relief—only 35c." In striking contrast to this statement *Hygeia* tells us that untrained efforts in injury or accident may cause great damage and make an accident many times more serious than it might otherwise have been.

When one reads the, too numerous to mention, remedies and sure cures for all that ails "baby" we can't fail to realize the need for sound advice on this subject. The inspiring article published in the May 1936 *Hygeia* on "Child Health" clearly sets forth that life is most precarious in its earliest hours and days. And anyone who read this article would, I am sure, feel the necessity of being directed in matters of health by one who has devoted his life to the help of humanity, the Physician. It is an inspiration to know that the medical profession never keeps secret the discoveries and advancements which go to make this world a better place in which to live.

May I pause here for you to ask yourself these questions which have been asked me:

1. Ques: Does the reading of *Hygeia* really do the patient any good?  
 Ans: Yes, indeed! It teaches facts about health, not fallacies.
2. Ques: Do you think *Hygeia* causes the patient to practice medicine for himself thereby causing the physicians not to be consulted?  
 Ans: I do not, since only enough symptomatology is given in *Hygeia* to afford the reader the ability to differentiate between normal and abnormal conditions. I am not aware of a single issue which has not pointed out the dangers of self-diagnosis and the necessity of immediately obtaining the counsel and advice of a competent physician.
3. Ques: Don't you think *Hygeia* is too high?  
 Ans: The advice of the medical profession, scientific, workable, and authentic is not high at any price. How could it be when there is nothing more priceless than health.
4. Ques: Do you think a physician's wife should solicit for *Hygeia* and do you not think it places her in the position of a magazine saleswoman?  
 Ans: As long as most of us are inescapably involved in a common destiny, and as long as coöperation is not a sentiment but an economic necessity, there can be nothing wrong with physicians' wives working in coöperation for a common cause as dignified as *Hygeia*. There is an old proverb which says "Despise not any man, nor spurn anything; for there is no man that has not his hour, nor is there anything that has not its place."
5. Ques: Why don't all the doctors subscribe to articles in *Hygeia*?  
 Ans: Why don't all doctors agree? Well-trained physicians use the same treatment wherever a real cure has been found—a specific for disease is quite generally used—all kinds of physicians use antitoxin for diphtheria—all kinds of doctors set a leg when it is broken—but in diseases where the exact cause is unknown or the best treatment is a matter of personal diagnosis then everyone has a right to his own opinion. But doctors do agree on one thing, that is a longing to help the sufferer. They constantly seek the truth, so that they can rightly qualify as their brother's keeper. They have taken their profession into their hearts as well as upon their shoulders.

There is no doubt but that we, in our work, are unmistakably and inescapably involved in a common destiny in which coöperation IS an economic necessity, NOT a sentiment. We need the unity of all for a single cause each playing his part for the general good of everyone. To cherish our organization as part of ourselves, we should be staunch, loyal, and true—be comrades. The sad side of any organization's life is when straining at the rules breaks the spirit of the group. Let's not seek selfish ends at any cost to others, prefer our vain glory rather than an achievement of common good, or shut our hearts to the troubles of others. If

## WOMAN'S AUXILIARY

we are to have a world where only a flower of life can grow and flourish, we must first see to it that the weeds are transformed into flowers or that the seeds of weeds are destroyed before life begins again. Let everyone of us pull together and let no one pull back.

Read before the Davidson County Medical Society by Mrs. James Dunn Lester, February, 1937, Hygeia Chairman to Woman's Auxiliary to A.M.A.

### COUNTY AUXILIARIES

#### Ingham County

On November 30 the Ingham County Auxiliary sponsored a lecture on "Popular Beliefs That Are Not So," with Dr. Paul Leshner as the lecturer. The meeting was open to the public with 500 present.

Two Yuletide events were planned by the Auxiliary—a tea, December 13, at the home of Mrs. D. A. Galbraith; and a Children's Party, December 18, at St. Paul's Episcopal Guild Hall. Mrs. Karl Brucker and Mrs. Walter Maner presented a dramatic reading with musical setting.

MRS. P. C. STRAUSS,  
*Press Chairman.*

#### Jackson County

The Jackson County Medical Society entertained their wives and guests at the Annual Banquet and Dance at the Hotel Hayes, Thursday evening, December 16. Dr. R. H. Alter presided as toastmaster. He introduced Dr. E. D. Crowley, the outgoing president, and his wife; Dr. John Van Schoick of Hanover, the new president, and his wife; and Dr. G. R. Bullen, president-elect for 1939, and his wife. Dr. Crowley handed the gavel over to his successor, Dr. Van Schoick, each making a few appropriate remarks. The ladies' places at the table were marked by beautiful corsages, the gift of the Chemist Shop. Delightful solo numbers were given by Miss Virginia Solomon, a Jackson violin virtuoso. She reappeared twice in response to the hearty applause and was generous in her encores. She was accompanied by Mr. Edgar Crowle. The remainder of the evening was spent in dancing, the music for both dinner and dance being furnished by Art Winter's orchestra.

ANNA HYDE SHAEFFER,  
*Press Chairman.*

#### Kalamazoo

The Kalamazoo Academy of Medicine was host to its Auxiliary at their annual dinner, Tuesday, December 21, 1937, at the Park American Hotel, with attendance of 135. Beautiful spring flowers centered the tables, which were presented to ladies of local and state officers.

Among the honored guests was Dr. A. H. Rockwell, honorary member. Dr. Rockwell, who is eighty-seven years old, graduated from the Medical School, University of Michigan, fifty-four years ago, practiced in Kalamazoo forty-nine years and served twenty-two years as director of public health.

Dr. R. J. Hubbell, newly elected president of the Academy, spoke briefly, and Mrs. W. W. Lang, president of the Auxiliary, was introduced and extended greetings.

The retiring president, Dr. W. G. Hoebeke, gave the exaugural address on "The Art of Medicine," dealing with the human relationship existing between doctor and patient.

The Academy paid tribute to the late Dr. A. W. Crane in a paper prepared and read by Dr. W. C. Huyser. Dr. Huyser ably sketched the life of Dr. Crane, who rose from an obscure practitioner to

international preëminence as a roentgenologist. Dr. Huyser also told of the work in sanitation done by the late Dr. Caroline Bartlett Crane, wife of Dr. A. W. Crane. This won wide recognition and led to her being made an associate member of the Academy of Medicine. Dr. Caroline B. Crane was a member of this Auxiliary and one of its founders. She also was the Organizer of the State Auxiliary.

Members of the Auxiliary brought gifts for the aged to be distributed at the Community Christmas tree.

(MRS. HUGO) BARBARA K. AACH.  
*Publicity Chairman.*

#### Kent County

On December 18, about two hundred of the doctors and their wives gathered at the Pantlind ballrooms after having attended various pre-dinner parties. The dinner dance was a colorful and entertaining affair. Phil Osterhouse introduced the group to the intricacies of The Big Apple. Mrs. M. W. Shellman and her committee well earned the pleased comments of the group.

The Hygeia committee, under the chairmanship of Mrs. William Butler, is working hard to make every member of the auxiliary a subscriber to Hygeia before the end of January. Mrs. John Whalen's Philanthropic committee have worked with the Hygeia committee on the two money-making projects this fall, the rummage sale and the benefit bridge, which netted the handsome total of \$191.00.

The women are very grateful to the Medical Society for a whole page in the *Kent County Bulletin*. This bulletin is published twice a month and each copy will have a full page of Auxiliary news.

Respectfully submitted,

(MRS. ROBERT M.) MIRIAM ADAMS EATON.

#### Monroe

The opening meeting of the Monroe County Medical Auxiliary was held at Miss Dunk's Tea Room, with sixteen members present for the usual six-thirty dinner. Due to the illness of our president, Mrs. Albert Reisig, our vice president, Mrs. T. A. McDonald, presided.

Reports were read by the secretary, Mrs. E. C. Long; treasurer, Mrs. M. A. Hunter; Program and Social Committees chairman, Mrs. W. W. Bond, and Membership Committee chairman, Mrs. R. J. Williams.

After an hour's informal discussion, the meeting was adjourned.

\* \* \*

The November meeting at the Monroe Country Club, November 18, was preceded by a dinner served to thirty members and guests. In the absence of our president, the vice president, Mrs. T. A. McDonald, presided.

Our Program chairman, Mrs. W. W. Bond, introduced the speaker of the evening, Dr. S. E. Gould, pathologist at Eloise Hospital, Eloise, Mich., who spoke to us on the subject, "What Everyone Should Know About Cancer." The meeting was open to the public.

Dr. Gould gave an interesting and enlightening talk on this subject, stressing the fact that people must be educated to immediately see a doctor, when there is the slightest suspicion of a growth.

Officers for the year are: President, Mrs. A. H. Reisig; vice president, Mrs. T. A. McDonald; secretary, Mrs. Edgar C. Long, and treasurer, Mrs. M. A. Hunter, all of Monroe.

(MRS. VINCENT) MARTHA BARKER.  
*Press Chairman.*



## MICHIGAN'S DEPARTMENT OF HEALTH

DON W. GUDAKUNST, M.D., Commissioner  
LANSING, MICHIGAN

### A REVIEW OF HEALTH PROGRESS IN 1937

A review of health conditions in Michigan during 1937, based upon unofficial statistics for the first ten months of that period, indicates an encouraging trend. The general death rate, the infant mortality rate, and the maternal mortality rate declined over comparable figures for the preceding year. Practically all of the major causes of death either remained stationary or showed definite increases.

All time low records for infant deaths and for deaths of mothers from causes incident to child-birth have been recorded for the first ten months of 1937. Equally low rates are expected when the final official statistics are compiled for the entire year. The infant mortality rate for the first ten months is 48.73 compared with a rate of 51.57 per 1,000 live births the previous year. A total of 3,655 infant deaths for the ten months compares with 3,850 in 1936.

Maternal mortality declined 25 per cent in 1937—the greatest single decrease in recent years. The new low rate for this period of 3.68 deaths per 1,000 live births compares with the 1936 rate of 4.96. There were 276 maternal deaths in ten months of 1937 compared with 370 in 1936.

The general death rate also shows an encouraging decline for 1937. A total of 44,655 deaths during ten months of 1937 means a 3 per cent drop in Michigan's death rate compared with 45,978 recorded the previous year. The death rate during this period is 10.55 per 1,000 population compared with 10.87 in the same period of 1936.

The birth rate also continued its slow rise from the depression-low point which was 15.96 in 1933. The birth rate during the past year reached 17.73 per 1,000 population compared with 17.65 in 1936. There have been 75,012 births recorded for the ten-month period compared with 74,661 in 1936.

Heart disease and cancer, the two major causes of death which have been increasing constantly for a decade, came to a halt in 1937 and showed definite decreases. The total of 7,994 deaths from heart disease is 454 less than in the same period of 1936. Cancer deaths totaled 4,563 compared with 4,649 in 1936. Deaths from apoplexy, nephritis and accidents (exclusive of automobile) declined greatly. Diabetes and pneumonia mortality show slight declines. It is the first time in recent years that pneumonia deaths have not increased. Typhoid fever deaths reached a new low figure in 1937, and diarrhea and enteritis deaths among children decreased 44 per cent.

The rather constant drop in tuberculosis mortality appears definitely to have come to a halt. For the second successive year deaths from this cause have increased slightly; 1,797 deaths have been reported in the ten-month period against 1,762 the previous year.

Deaths caused by automobiles showed the greatest increase of all in 1937. The total of 1,804 deaths for ten months is running 22 per cent ahead of the all-time high mortality recorded in 1936. By the end of November, 1,966 deaths had been caused by automobiles—already topping the 1,913 deaths for the entire previous year.

Two communicable disease outbreaks attracted

major attention in 1937. The trichinosis outbreak at Capac was reported to be one of the largest ever observed. The Monroe county outbreak of smallpox accounted for almost all of the cases of this disease occurring in Michigan during the past year and emphasized again the need for continued vaccination programs as the only means of prevention. Diphtheria and scarlet fever, too, were unusually prevalent in 1937. Deaths from diphtheria increased from 32 to 56.

The extensive maternal and child health program conducted by the department in 1937 with the aid of Social Security funds was carried out in close coöperation with local medical societies. This program included refresher courses in pediatrics and obstetrics for physicians in Northern Michigan and the Upper Peninsula, the furnishing of public health nursing services to 21 counties heretofore not provided with this service, renewed emphasis on nutrition, the development of an experimental home delivery service, and the conduct of a state-wide educational program which reached 99,292 women and girls in health classes conducted by staff physicians.

In the field of public health organization, the development and supervision of local, full-time health departments continued to be a major project of the Michigan Department of Health in 1937. At present 56 of the 83 counties are provided with such departments, serving 55 per cent of the rural population. Including the ten major city health departments, full-time health departments are now serving 73 per cent of Michigan's total population.

Since Social Security funds became available in the spring of 1936, a total of seventeen counties in the rural areas of Northern Michigan have been aided in organizing county or district health departments. Counties which have recently formed either single county or district health departments with the aid of federal funds allocated by the Michigan Department of Health include Alger, Schoolcraft, Keweenaw, Iron, Mason, Manistee, Mecosta, Oscoda, Menominee, Ontonagon, Baraga and Sanilac.

In coöperation with the Advisory Committee on Syphilis Control of the Michigan State Medical Society, the department, in 1937, launched a broad syphilis control program. New rules and regulations have been adopted as one measure for securing isolation and prompt, continuous treatment of infectious cases of syphilis. Curative drugs are being distributed free of charge to physicians whose patients cannot afford them; diagnostic laboratory services have been expanded to meet the needs of physicians; and a special division of syphilis control has been created to administer the program. New and more convenient venereal disease report forms have been provided, and suggested outlines for the treatment of syphilis prepared by the Michigan State Medical Society have been printed for general distribution.

The promotion of a state tuberculosis control program has been a major department activity in 1937. This program has been aided greatly by the modernizing of Michigan's tuberculosis laws by the last legislature. Intensive case finding campaigns utilizing improved diagnostic methods and applying active treatment to early cases are being conducted by local health departments under the supervision of the Division of Tuberculosis.

The department's preliminary pneumonia control program, based upon the development and free distribution of antipneumococcic sera to physicians made progress in 1937. The potency and safety of the department's sera has been extensively tested and the product is ready for general distribution if

(Continued on page 184)

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additional funds become available. A trained epidemiologist has been assigned to direct the department's control program.

Dedication of the new \$250,000 diagnostic laboratories of the department in 1937 marked the fiftieth anniversary of public health laboratory service in CALLERY ..... Jan 7—Michigan. The new laboratories provide more rapid and extensive diagnostic services for physicians and health officers. In November, 1937, the laboratories performed 37,237 examinations compared to 25,561 in the same month of 1936—a 45 per cent increase.

The department laboratories in 1937 made arrangements to care for the majority of tests for venereal disease which have been necessitated by passage of the Antenuptial Physical Examination Law. In addition to making the required examinations, the laboratories are charged with the constant checking of the 125 registered laboratories approved for serodiagnosis of syphilis. Since the new marriage law went into effect on October 29, the laboratories have found positive indications of syphilis in approximately 1 per cent of the specimens examined.

Michigan, in 1937, witnessed a year of unprecedented activity in the field of sanitary engineering. With the aid of federal funds many communities have constructed long-needed improvements to water supply and sewage disposal systems. Plans, construction and maintenance of these plants are supervised by the department's Bureau of Engineering. New water treatment plants have been placed in operation during the past year at Algonac, Ann Arbor, Big Rapids, Marine City, Muskegon, New Baltimore, Owosso and Pinconning. Extensive repairs and enlargements to plants have been made at Bay City, Benton Harbor, Harbor Beach, Highland Park, Midland and Ramsay. A total of 339 public water supplies are now being supervised by the department.

During 1937, thirteen new sewage treatment plants have been completed and placed in operation. A population of over 2,700,000 is now being served by adequate sewage treatment systems. Plants are now under construction and will be completed during the coming year at Cass City, South Lyon, Sandusky, Detroit and Lansing. Eleven artificial swimming pools were constructed in 1937 with the approval of the department and 1,800 resorts were inspected by local sanitarians and certified by the department.

Michigan's industrial hygiene program got under way in 1937 with extensive surveys being made of all foundries, paper mills and furniture factories. Operators of these plants have been informed of results of these surveys, of possible occupational hazards, the number of employees subject to possible hazards, signs and symptoms of diseases which might occur, and methods for preventing known occupational hazards. Similar surveys are being conducted in the chromium plating, stone cutting, dry cleaning and printing industries. The occupational disease reporting law, which became effective in 1937, is being administered by the Bureau of Industrial Hygiene. Physicians are now required to report cases of occupational disease, thus making it possible to determine from this data the sources of greatest danger to industrial workers.

Thus, with declining mortality rates, the passage of significant health legislation, increased maternal and child health protection, improved communicable disease control, and the further extension of health services into rural areas of the state, the Michigan Department of Health completes its sixty-fifth year of public health service.

## IN MEMORIAM

### Dr. William S. Brownell

Dr. William S. Brownell of Detroit died on January 24, 1938. He was born sixty-nine years ago at Utica, Michigan, and was the son of Dr. William Brownell, a major in the Civil War. He was a graduate of the University of Michigan and the Detroit College of Medicine, and had practiced in Detroit since 1890. During the World War, he was a captain in the medical corps. Dr. Brownell gave up most of his activities six years ago when he became ill. He had been a member of the Wayne County Medical Society. He is survived by his wife, Mrs. Elsi Cain Brownell, and a sister, Miss Katherine Brownell, of Utica.

### Dr. John W. Hauxhurst

Dr. John W. Hauxhurst of Bay City died on January 22, 1938. He suffered an apoplectic stroke earlier in the week and never regained consciousness. Dr. Hauxhurst was born in 1848 at Jericho, New York. When a young man, he left home to teach school in Booneville, Missouri, but later entered the University of Michigan Medical School where he graduated in 1876. He had practiced continuously in Bay City since that time. He was a charter member and past-president of the Bay County Medical Society, a member of the Michigan State Medical Society and the American Medical Association. He was honored by the Bay County Medical Society on his fiftieth year in practice. Surviving Dr. Hauxhurst are his widow, a son, Henry Austin Hauxhurst of Cleveland, and a daughter, Miss Florence Hauxhurst.

### Dr. William Grant Bird

Dr. William Grant Bird of Flint died on January 21, 1938. He was born June 6, 1868, at Eagle Harbor, Michigan, and later lived at Romulus, Michigan. He was graduated from the Detroit College of Medicine in 1895 and began general practice in Milford. In 1900, Dr. Bird limited his practice to diseases of the eye, ear, nose and throat, and opened an office in Flint. He was a member of the Genesee County Medical Society, the Michigan State and American Medical Associations, and a Fellow of the American College of Surgeons. He was a past-president of the Genesee County Medical Society and served as Councillor for the sixth district of the Michigan State Medical Society for two years. Dr. Bird took extensive post-graduate work in medical centers in this country and in Vienna and London. He is survived by William Carroll Bird, the son from his first marriage; Mrs. Bird and their son, John Grant Bird, and daughter, Miss Josephine Ann Bird.

### Dr. Allison B. Toaz

Dr. Allison B. Toaz of Detroit was instantly killed at noon on January 31, 1938, when his automobile collided with a truck near Detroit. He was fifty-one years of age. Dr. Toaz was a graduate of the medical department of Wayne University of the class of 1914. He had been practicing in Detroit since his graduation. Dr. Toaz was a member of the staff of Woman's Hospital, Providence Hospital and the Booth Memorial Hospital, Detroit. He is survived by his wife and five children, Phyllis, a student at Albion College; Robert, a student at Western Reserve University Medical School, Cleveland; Jean, a student at Ypsilanti State Normal College; Richard and Warren.



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## ◆ General News and Announcements ◆

### *The One Hundred Per Cent Club of the Michigan State Medical Society*

1. Ingham County Medical Society
2. Luce County Medical Society
3. Muskegon County Medical Society
4. Newaygo County Medical Society
5. Ontonagon County Medical Society
6. Shiawassee County Medical Society

These six county medical societies are the first to record 100 per cent paid membership for the year 1938. Dues for 1938 are now payable and are being received daily from the various county medical society secretaries. See your County Secretary today and help your Society become one of the first members of the "One Hundred Per Cent Club for 1938."

*Dr. Walter J. Cree* of Detroit is spending several months in Florida.

*The Milwaukee Sanitarium* of Wauwatosa, Wis., announces the appointment of *Dr. Lloyd A. Ziegler* as Associate Medical Instructor.

Before signing an order with detail men, ask them if they advertise in *THE JOURNAL* of the M.S.M.S., and if they exhibit at the annual session of the Michigan State Medical Society.

*F. W. Hartman, M.D.*, Detroit, is the author of an original article in the *Jour. A.M.A.*, issue of December 25, 1937, entitled "Lesions of the Brain Following Fever Therapy: Etiology and Pathogenesis."

*Secretary L. Fernald Foster* spoke before the joint meeting of the St. Clair County Medical Society and the St. Clair Bar Association in Port Huron on January 18. His subject was "Professional Cooperation and Advancement."

*Walter G. Maddock, M.D.*, *Svend Pedersen, Ph.D.* and *Frederick A. Collier, M.D.*, of Ann Arbor, are authors of an article in the *Jour. A.M.A.*, December 25, 1937, issue, entitled "Studies of the Blood Chemistry in Thyroid Crisis."

*Burt R. Shurly, M.D.*, of Detroit, is the author of an original article in the *Journal of the American Medical Association*, issue of December 18, 1937, entitled "Otolaryngology in Relation to General Medicine."

*The Wayne County Medical Society*, in the Detroit Medical News, publishes each year a list of new members. The 1937 list totalled 182 names, including 55 reinstatements to senior active membership.

*The Ohio State Medical Association* is sponsoring a Special Train to the 1938 session of the American Medical Association in San Francisco next June. For further information on the Ohio-A.M.A. special train, write *C. S. Nelson*, Executive Secretary, Hartman Theatre Building, Columbus, Ohio.

*Senator D. Hale Brake* of Stanton was guest speaker before the Battle Creek Academy of Medi-

cine and Dentistry on January 25. He explained the 1937 Welfare Laws of Michigan, which will be the subject of a referendum next November. Executive Secretary *Wm. J. Burns* introduced Senator *Brake* to the seventy-five physicians and dentists present.

*Dr. L. O. Schantz* of Flint has been appointed Medical Coordinator for the county of Genesee in connection with the Afflicted Child Act. His duties will be to check on the medical necessity of those cases applying under this law, and to follow all cases committed by the courts through the period of hospitalization in any hospital in Genesee County. *Dr. Schantz* was appointed on December 1 by Auditor General *George T. Gundry*.

*Dr. Henry E. Perry* of Newberry, immediate past president of the Michigan State Medical Society, was honored by the members of the Luce County Medical Society at a meeting at Doctor *Perry's* home on January 11. During the meeting, Doctor *Perry* was presented with a fine Gladstone bag in recognition of services rendered as president of the Michigan State Medical Society. *Dr. F. C. Bandy* of Sault St. Marie, Councilor for the Twelfth District, was present. *Dr. Perry* and his daughter, *Jean Barbara*, left for the sunny climate of Florida on the 15th of the month.

The members of the Advisory Committee on Syphilis Control are: Chairman *Loren W. Shaffer, M.D.*, Detroit; *Robt. S. Breakey, M.D.*, Lansing; *R. S. Dixon, M.D.*, Detroit; *George Hays, M.D.*, Flint; *R. H. Holmes, M.D.*, Muskegon; *Wm. A. Hyland, M.D.*, Grand Rapids; *John Lavan, M.D.*, Grand Rapids; *C. K. Valade, M.D.*, Detroit and *Udo J. Wile, M.D.*, Ann Arbor.

The members of the Advisory Committee on Tuberculosis Control are: Chairman *Bruce H. Douglas, M.D.*, Detroit; *Robt. B. Harkness, M.D.*, Hastings; *George A. Sherman, M.D.*, Pontiac; *G. C. Stucky, M.D.*, Lansing; *B. A. Shepard, M.D.*, Kalamazoo; *E. R. Witwer, M.D.*, Detroit and *A. W. Newitt, M.D.*, Lansing.

### Staff of Butterworth Hospital

Medical staff of Butterworth Hospital, Grand Rapids, reelected *Dr. Harrison C. Collisi* chief of staff, and *Dr. Leland M. McKinley* vice chief of staff at their annual meeting. *Dr. A. J. Baker* succeeded *Dr. James S. Brotherhood* as chief of medicine.

Other departmental chiefs, all reelected, are as follows: Chief of surgery, *Dr. G. Howard Southwick*; chief of gynecology, *Dr. J. Clinton Foshee*; chief of obstetrics, *Dr. Leon C. Bosch*; chief of eye, ear, nose and throat, *Dr. Henry Blackburn*; chief of pediatrics, *Dr. Lorenz J. Schermerhorn*. The staff executive committee is made up of *Dr. Collisi*, *Dr. Baker*, *Dr. Southwick*, *Dr. Schermerhorn*, *Dr. Bosch* and *Dr. N. A. Wilhelm*.

### Association of Military Surgeons of the United States

At a special meeting of the Executive Council of the Association of Military Surgeons, which was held at the Army and Navy Club, Washington, D. C., January 7, 1938, Rochester, Minnesota, and the Mayo Clinic were selected as the next meeting place for the annual gathering of the Association, the dates being October 13, 14, and 15. At this

(Continued on page 188)

## PROFESSIONAL ANNOUNCEMENTS

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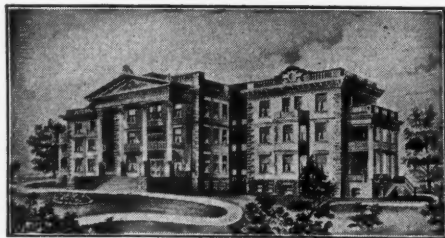
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meeting not only the regular members of the Council were present, but also Major General Charles R. Reynolds, Surgeon General of the Army; Rear Admiral P. S. Rossiter, Surgeon General of the Navy; Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service; Dr. Philip B. Matz, representing Dr. Charles M. Griffith, Medical Director of the Veterans' Administration, and other outstanding medico-military men.

\* \* \*

The "Golfers Special" to Frisco for the A.M.A. Convention, June 13 to 17, 1938, includes an ocean voyage from New York to New Orleans on the S. S. Dixie, June 1 to 7. The first game of golf will be played in New Orleans on June 7, followed by stops at Houston, Galveston, San Antonio, Los Angeles, Del Monte and finally the big A.M.G.A. tournament in San Francisco on Monday, June 13.

After four days in San Francisco, the party will return through Portland, Seattle, Vancouver, Lake Louise and Banff, with two additional games of golf.

Non-golfers as well as golfers (and their ladies) are invited.

For further information and particulars write Bill Burns, 731 No. Capitol Street, Lansing.

\* \* \*

Just to remind you, a list of some of your friends who entered technical exhibits at the Grand Rapids Convention of the Michigan State Medical Society, will be published each month in THE JOURNAL.

For your convenience here are ten of the firms which displayed their products at the Michigan State Medical Society Annual Meeting in September, 1937:

H. J. Heinz Company, Pittsburgh, Pa.  
Holland-Rantos Company, Inc., New York, N. Y.  
Horlick's Malted Milk Corporation, Racine, Wis.  
The G. A. Ingram Company, Detroit, Mich.  
The Jones Surgical Supply Company, Cleveland, O.  
The Kellogg Company, Battle Creek, Mich.  
A. Kuhlman & Company, Detroit, Mich.  
Lea & Febiger, Philadelphia, Pa.  
Lederle Laboratories, Inc., New York, N. Y.  
J. B. Lippincott Company, Philadelphia, Pa.

\* \* \*

The Michigan State Medical Society is not now and never has been in favor of socialized medicine or compulsory sickness insurance. In 1934, its committee on medical economics presented a mutual health service plan to the House of Delegates of the State Society as a committee report, upon which no action has been taken.

Since 1931, the Michigan State Medical Society has sponsored studies costing \$20,168.96 designed to perfect both the distribution of medical care and its high quality. It has gone far to cut the cost of illness. From its comprehensive surveys, it finds no existing evidence of comparable data to show that a socialized medicine system would work in Michigan. This State is unique in its government, per capita wealth, type of population, rural and urban areas, etc.

\* \* \*

What is a Wassermann-fast case? A Wassermann-fast case is one that presents no clinical findings of active syphilis including negative spinal fluid or evidence of cardiovascular disease and continues to run a positive serological test on the blood serum for syphilis in spite of an amount of treatment considered adequate to arrest the average case. This amount of treatment might be defined differently by various authorities. Most authorities agree that it should consist of a minimum of twenty-four injections of arsenicals and a similar amount of heavy metal (bismuth or mercury) and be given continually without break in treatment regularity. In other words, a case might receive

JOUR. M.S.M.S.

this total amount of treatment but if the treatment was administered sporadically, say six injections of each, yearly, this would not be sufficient to classify the case as Wassermann-fast according to definition.

\* \* \*

*Modern Hospital* made the following editorial comment, in discussing the question of the right of a governmental hospital (such as Hurley Hospital, Flint) to limit its staff to doctors of medicine:

"Hence, the board of trustees of such an institution (government hospital) may decide what in their judgment is the safest practice to follow in the care of the sick and indigent. Even when statutes limit the free action of the boards of government hospitals in respect to the exclusion of cultists, more than one jury has protected the cause of the patient. The high standing of the hospital staff is the business of the board of trustees. It and only it may close the institutional doors to the quack and pretender.

"This is sound reasoning. Hospital standards cannot be maintained if medical staff personnel is of a low grade. Staff standards cannot be maintained if practitioners of all types and sects are granted staff membership. Hospitals cannot receive approval and Class A rating from the American Medical Association and American College of Surgeons—important ratings—if they permit others than doctors of medicine to practice in the institution. Surely, no hospital management wants to take the risks involved in opening its doors to the unqualified."

\* \* \*

#### Michigan Pathological Society

The Michigan Pathological Society held its annual meeting at the University of Michigan Hospital at Ann Arbor, Michigan, on December 12, 1937.

The scientific subject for the meeting was "Criminological Pathology." The University Hospital staff presented interesting material illustrating the pathologic lesions of severely burned bodies and technic for identification and determination of the relationship of the time of death to the time of burning. The presentation also included a demonstration of the fluorescence of various materials under ultra-violet light and the possibilities of the application of this method to an analysis of stains in fabric.

The following officers were elected for the ensuing year: President, Dr. R. C. Wanstrom; president-elect, Dr. O. W. Lohr; secretary-treasurer, Dr. W. L. Brosius; councillor, Dr. A. A. Humphrey.

\* \* \*

The *Mississippi Valley Medical Society* offers a cash prize of \$100.00, a gold medal and a certificate of award for the best unpublished essay on a subject of interest and practical value to the general practitioner of medicine. Entrants must be ethical licensed physicians, residents of the United States and graduates of approved medical schools. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society (September 28, 29, 30, 1938), the Society reserving the exclusive right to first publish the essay in its official publication—the *Radiologic Review and Mississippi Valley Medical Journal*. All contributions shall not exceed 5000 words, must be typewritten in English in manuscript form, submitted in five copies, and must be received not later than May 15, 1938. Further details may be secured from Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

\* \* \*

#### Physician Artists

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold a first national exhibition in the San Francisco Museum of Art, San Francisco, California, in June, 1938. (The American Medical Association Convention is June 13-17 in the same city). The American Physicians' Art

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Association already has an outstanding membership. There are three classifications for membership: active, associate, and contributing. The first annual exhibition promises to be of unusual interest with entries to be accepted (after jury selection) in the following classifications: oils, watercolors, sculpture, photography, pastels, etchings, crayon and pen and ink drawings (including cartoons), wood carvings and book bindings. Scientific medical art work will not be accepted. The exhibition is not limited to first showings. All entries close April 1, 1938. Any physician interested should communicate at once with the Secretary of the American Physicians' Art Association, Suite 521-536 Flood Bldg., San Francisco, California.

\* \* \*

Dr. Daniel Herkimer and Dr. Dayton O'Donnell of Detroit have returned from two months travel in Europe in which a portion of the time was spent in postgraduate work in Vienna. In their travel in Germany, the impression was gleaned that the people were contented and prosperous. Dr. Herkimer explains, however, that this is a superficial observation, that a longer sojourn and more intimate contact with the people might give a different view. He was impressed with the military preparations and particularly the wonderful military highways that lead across the country, usually at some distance from large cities. These highways make for speed should mobilization be suddenly attempted. Dr. Herkimer spoke of satisfactory opportunities for instruction in the English language which has been secured by the American Medical Association of Vienna. A doctor from the United States or elsewhere, however, who has a good speaking knowledge of the German language can get along in Vienna much more cheaply so far as fees are concerned, than non-German students. He also adds that the foreign student is an observer and is not permitted to perform operations.

\* \* \*

The Crippled Children Commission, in coöperation with the Michigan State Medical Society and the Postgraduate Department of the U. of M., sponsored a "Refresher Course," financed by Social Security funds, on December 13, 1937. The meeting was held in Sturgis at the Hotel Elliott.

Dr. John Law of the Pediatric Division of the U. of M. gave a talk on the problem child, illustrated with lantern slides; Dr. Clarence Snyder, Orthopedic Surgeon of Grand Rapids, presented information on the use of skeleton traction on fractures of the lower extremities.

They, too, were present at the refresher clinic, with physicians coming from Hillsdale, Cass, Branch and St. Joseph counties, and a number from Indiana.

The refresher clinic was followed on the next day by the Handicapped Child's Clinic, in which 182 children were registered during the day. The examining physicians included Dr. Clarence Snyder and Dr. Wm. Scott, psychiatrist, of Kalamazoo. This clinic was sponsored by the Michigan Association for Crippled Children in coöperation with the Sturgis Rotary and Exchange Clubs. Dr. David M. Kane of Sturgis was in charge of arrangements.

\* \* \*

### Foundation Prize

The following are the rules which govern the awarding of the annual prize of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons. Those interested may obtain further information by addressing Dr. James R.

JOUR. M.S.M.S.



Bloss, Secretary, 418 Eleventh Street, Huntington, West Virginia.

(1) The award, which shall be known as "The Foundation Prize," shall consist of \$500.00.

(2) Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal Surgery.

(3) Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant.

(4) Manuscripts must be limited to 5,000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis.

(5) The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors.

(6) All manuscripts entered in a given year must be in the hands of the Secretary before June 1.

(7) The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation.

(8) The President of the Association shall annually appoint a Committee on Award, which, under its own regulations, shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting.

\* \* \*

#### Brief Survey on Postgraduate Medical Education

Thirty-four states, including the District of Columbia, have some form of organized graduate medical education. Other states are planning courses and only one state reports abandonment of courses for lack of interest. Twenty-five state medical societies sponsor courses; twenty-two conduct them and eighteen do both. In several state colleges, state health departments, social security administrators and various foundations have coöperated. Twenty-four of the courses given include lectures; fifteen demonstrations; twenty conduct clinics and thirteen include all three forms of instruction; some states have devoted their annual meetings to graduate medical education. The usual length of course runs one lecture weekly for five to eight consecutive weeks. Nineteen state associations use members of the medical school faculty and sixteen employ practicing physicians for their faculties. Nearly every state association conducts some form of graduate education at a central location and also has some method by which it attempts to reach all sections of the state. The majority of the courses given are for general practitioners. They are financed from the treasuries of the state medical societies; by registration fees or by financial assistance from other sources. The results of these graduate educational activities have been excellent in every state except one.

FEBRUARY, 1938

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### CREDIT IS DUE

The following members of the Michigan State Medical Society were present at the postgraduate assemblies of the Michigan State Medical Society Annual Meeting in Grand Rapids, September 27, 28, 29, 30, 1937:

Drs. Hugo Aach, Kalamazoo; Frank A. Adams, Grand Rapids; C. A. Alexander, Kalamazoo; Reuben G. Alexander, Laingsburg; Ralph V. Allen, Grand Rapids; E. B. Anderson, Iron Mountain; Chester C. Ames, Detroit; Robert J. Armstrong, Kalamazoo; A. L. Arnold, Owosso; Ralph V. August, Muskegon Heights.

Drs. Gustav A. Bachman, Grand Rapids; Carl E. Badgley, Ann Arbor; George H. Baert, Grand Rapids; Abel J. Baker, Grand Rapids; Charles H. Baker, Bay City; Milner S. Ballard, Grand Rapids; L. R. Banner, Kalamazoo; R. H. Baribeau, Battle Creek; James W. Barnebee, Kalamazoo; S. E. Barnhart, Battle Creek; Francis W. Bartholic, Grass Lake; H. S. Bartholomew, Lansing; F. W. Baske, Flint; C. M. Baskerville, Mt. Pleasant; D. K. Barstow, St. Louis; LaMott F. Bates, Durand; Willard G. Beattie, Ferndale; O. O. Beck, Birmingham; Horace J. Beel, Grand Rapids; Carl B. Beeman, Grand Rapids; G. W. Behan, Galesburg; William C. Behen, Lansing; Charles M. Bell, Grand Rapids; C. D. Bennett, Kalamazoo; John H. Besancon, Detroit; William L. Bird, Greenville; G. C. Bishop, Almont; T. P. Bishop, Grand Rapids; H. M. Blackburn, Grand Rapids; A. F. Bliesmer, St. Joseph; D. C. Bloemendal, Zeeland; P. W. Blossom, Grand Rapids; Frank A. Boet, Grand Rapids; Leon M. Bogart, Flint; J. E. Bolender, Grand Rapids; George L. Bond, Grand Rapids; Frank M. Boonstra, Muskegon; Leon C. Bosch, Grand Rapids; Devere R. Boyd, Muskegon; C. E. Boys, Kalamazoo; Floyd Boys, Kalamazoo; Robert M. Bradley, Flint; Park S. Bradshaw, Muskegon; C. W. Brainard, Battle Creek; H. E. Branch, Detroit; F. W. Bramigk, Detroit; Francis Brennecke, Grand Rapids; Osborne A. Brines, Detroit; Iris M. Brydges, Detroit; William Bromme, Detroit; Clark D. Brooks, Detroit; J. D. Brook, Grandville; Jas. S. Brotherhood, Grand Rapids; G. M. Brown, Bay City; Willis E. Brown, Ann Arbor; Eugene S. Browning, Grand Rapids; Jacob Bruggema, Evart; E. T. Brunson, Ganges; Kathryn M. Bryan, Manistee; M. J. Budge, Ithaca; Frank L. Bull, Sparta; Austin F. Burdick, Lansing; John S. Burleson, Grand Rapids; Willard N. Burleson, Grand Rapids; Jacob H. Burley, Port Huron; W. M. Burling, Grand Rapids; Dean C. Burns, Petoskey; Milton G. Butler, Saginaw; Wm. J. Butler, Grand Rapids; Nils Olof Byland, Battle Creek.

Drs. Wm. T. Cameron, Lansing; Don M. Campbell, Detroit; Alice Fern Campbell, Albion; John F. Cardwell, Grand Rapids; Clarence A. Carpenter, Onaway; Earl Ingram Carr, Lansing; Wm. J. Cassidy, Detroit; Harold J. Cawthorne, Benton Harbor; Hector M. Chabut, Jackson; M. S. Chambers, Flint; Louis H. Chamberlin, Grand Rapids; Wm. S. Chapin, Muskegon Heights; Arthur N. Chatel, Detroit; L. F. Chess, Reed City; L. G. Christian, Lansing; J. W. Christie, Pontiac; E. O. Cilley, Grand Rapids; Nelson H. Clark, Holland; Rudolph I. Clark, Dowagiac; Robert W. Claytor, Grand Rapids; Clifford P. Clark, Flint; Leon F. Cobb, Pontiac; M. Coburn, Coopersville; Sol. G. Cohan, Muskegon; W. C. C. Cole, Detroit; Irving E. Colef, Benton Harbor; C. M. Colignon, Muskegon; Frederick A. Collier, Ann Arbor; Ward E. Collins, Kalamazoo; Harrison S. Collisi, Grand Rapids; Walter G. Colvin, Grand Rapids; C. W. Colwell, Flint; T. H. Cooper, Port Huron; G. A. Conrad, Sault Ste. Marie; Robt. C. Conybeare, Benton Harbor; Raymond J. Cook, Lansing; Ralph G. Cook, Kalamazoo; A. J. Cortopassi, Saginaw; Joseph M. Croman, Jr., Mt. Clemens; Harold D. Crane, Grand Rapids; Charles V. Crane, Grand Rapids; Walter J. Cree, Detroit; B. A. Credille, Flint; M. Edw. Cunningham, Grand Rapids; Fred P. Currier, Grand Rapids; J. C. Curlett, Detroit; Geo. James Curry, Flint; Arthur Covell Curtis, Ann Arbor.

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Dr. J. P. Yegge, Kent City.

Dr. A. L. Ziliak, Bay City.

The above list represents the registration of Tuesday, September 28, 1937. The registration of Wednesday and Thursday will be published in succeeding issues of the JOURNAL.

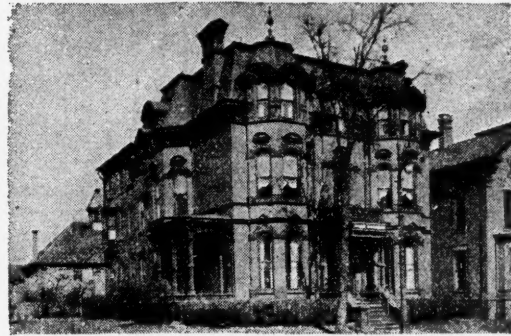
### Dr. Rollin H. Stevens Honored

A testimonial dinner was tendered Dr. Rollin H. Stevens of Detroit, January 28, by the Grace Hospital Staff, together with the Detroit X-ray and Radium Society and the Detroit Dermatological Society. The occasion was the doctor's seventieth birthday. The January (1938) number of *Radiology*, the official publication of the Radiological Society of North America, was a Stevens number. The opening paper of *Radiology* was entitled "Rollin Howard Stevens, An Anniversary Chronicle of His Useful Life," by Dr. Percy Brown of Boston. Each guest at the dinner received a copy of this interesting paper in reprint form. Dr. Howard P. Doub of the Henry Ford Hospital staff and president of the Radiological Society of North America, presented Dr. Stevens with a leather-bound volume of the January issue of the society's journal, *Radiology*. A barometer and thermometer were presented by Dr. E. W. Hall, president of the Detroit Roentgen Ray and Radium Society, and Dr. G. Warren Hyde, vice president of the Detroit Dermatological Society, gave him a lamp. A biographical sketch of Dr. Stevens' life was given by Dr. M. A. Darling, chief of Obstetrics at Grace Hospital, who also presented to him a traveling bag from the staff of that hospital. With Dr. Stevens as guest of honor at the dinner was Dr. Mary Ella Thompson Stevens, his wife.

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**FEVER THERAPY.** Abstracts and Discussions of Papers Presented at the First International Conference on Fever Therapy. College of Physicians and Surgeons, Columbia University, New York City, March 29, 30, 31, 1937. Edited by the Members of the American Committee: Dr. Walter M. Simpson, Dayton, Ohio, Chairman; Dr. William Bierman, New York City, Secretary; Dr. Charles M. Carpenter, Rochester, New York; Dr. Charles A. Doan, Columbus, Ohio; Dr. Frank W. Hartman, Detroit, Michigan; Dr. Leland E. Hinsie, New York City; Dr. Frank H. Krusen, Rochester, Minnesota; Dr. Clarence A. Neymann, Chicago, Illinois; Dr. Stafford L. Warren, Rochester, New York. Price, \$5.00. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1937.

**SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK.** By Arthur E. Hertzler, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas, Professor of Surgery, University of Kansas. 206 illustrations. Philadelphia, Montreal and London: J. B. Lippincott Company, 1937.

**PRENATAL AND POSTNATAL MANAGEMENT.** By J. St. George Wilson, M.C., M.B., Hon. Obstetric and Gynecological Surgeon, Royal Infirmary, Liverpool, with a Foreword by Sir Comyns Berkely, M.C., M.A., M.D., pages 206, price \$4.00. William Wood & Company, Baltimore, 1937.

**PRACTICAL PROCTOLOGY.** By Louis A. Buie, A.B., M.D., F.A.C.S. Head of Section on Proctology, The Mayo Clinic; Professor of Proctology, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. Illustrated. Philadelphia and London: W. B. Saunders Company, 1937.

This author feels that proctologic diseases have not received, heretofore, the consideration that they justly deserve. This is due in part to an inherent modesty of the patient and in part to lack of knowledge and appreciation of these symptoms by the physician when they are presented. In his chapter on the attitude of the physician and of the patient, he attempts to correct this fault. Throughout this work the author attempts to make the physician and patient conscious of the gravity of symptoms that arise from this class of disease. His descriptions are clear and concise. Many drawings enhance the value of the text. The descriptions of treatment advocated are of those used at the Mayo Clinic. For the general practitioner this work should be of great value.

**A PRACTICAL TREATISE ON DISEASES OF THE SKIN FOR THE USE OF STUDENTS AND PRACTITIONERS.** By Oliver S. Ormsby, M.D. Clinical Professor and Chairman of the Department of Dermatology, Rush Medical College of the University of Chicago. Fifth Edition, Thoroughly Revised; Illustrated with 658 Engravings and Three Colored Plates. Philadelphia: Lea and Febiger, 1937.

In this edition the author has revised and completely rewritten several chapters. There have also been included descriptions of several new skin diseases. The arrangement of the subject matter is the same as in previous editions. The descriptions are clear and detailed. The many illustrations, of which many are new, properly enhance the value of the descriptions. The chapter on external treatment is particularly interesting in its descriptions of the various drugs used and their actions in the various strengths employed. Herein one finds clarified the reason for some of the dermatologic prescriptions one finds recommended. Footnotes furnish references to many papers on dermatologic subjects, thus amplifying the text for the aid of investigative and research students.

**CLINICAL ENDOCRINOLOGY.** By Samuel A. Loewenberg, M.D., F.A.C.P., Clinical Professor of Medicine, Jefferson Medical College, Philadelphia; Asst. Visiting Physician, Jefferson Hospital, Visiting Physician, Philadelphia General Hospital, Northern Liberties Hospital and Eagleville Sanatorium for Consumptives; Consulting Physician to the Philadelphia Hospital for Contagious Diseases; Author of "Diagnostic Methods and Interpretation in Internal Medicine." Foreword by Hobart A. Reinmann, M.D., Professor of Medicine and Clinical Medicine, Jefferson Medical College, Philadelphia. 778 pages with 194 illustrations and 37 charts and tables. Philadelphia: F. A. Davis Company, 1937.

In recent years, endocrinology has made rapid strides and its contributions to the medical literature have been vast. It is indeed welcome to the student and particularly to the practitioner to have access to a source of information about the endocrine glands so arranged and brought up to date as to give him a bird's-eye view of the progress being made toward understanding and making practical application of these glands and their products. The author treats the subject in a duly cautious manner, cognizant of the debatable questions as well as of the known facts, and he has attempted to interpret involved questions giving the reasons for his opinions. Each endocrine gland is discussed thoroughly, including anatomical position, a short historic sketch, the physiology, the more important researches, the specific hormones, and the pathology of the gland. The discussion is ably supplemented by excellent illustrative photography, most of which is original with the author, who has himself dealt with a considerable number of endocrinopathies. Some valuable comprehensive charts and tables are included. One would do well to have such a volume for reference inasmuch as the material is well organized, lucidly presented, and brought up to the minute.

**THE DIGESTIVE TRACT: A Radiological Study of its Anatomy, Physiology, and Pathology.** By Alfred E. Barclay, O.B.E., M.A., M.D. (Cantab.), D.M.R.&E. (Camb.), M.R.C.P., F.A.C.R., Honorary Radiologist to the Nuffield Institute for Medical Research, Oxford. Formerly Lecturer in Medical Radiology, University of Cambridge, Hon. Medical Officer in Charge of the X-Ray Department, Manchester Royal Infirmary, and Lecturer in Clinical Radiology, University of Manchester. Sometime President, British Institute of Radiology; Electro-Therapeutic Section, Royal Society of Medicine; Roentgen Society; and Electro-Therapeutic Section, British Medical Association. Second Edition. 296 Illustrations and 427 pages. Price: \$12.00. Cambridge: The University Press. New York: Macmillan Company, 1936.

No examination of the alimentary system is complete that omits examination by the x-rays. This is generally conceded. Furthermore, such examination yields the most accurate results when made by one who spends the major portion or all of his time making x-ray examinations, whether he be roentgenologist or gastro-enterologist. It is better that the referring surgeon or internist be conversant with the methods of the roentgenologist. This will serve as the reviewer's explanation for emphasizing the importance of such a work as the present volume to those who do not include x-ray apparatus among their office equipment. "Roentgenology of the Digestive Tract" makes possible a knowledge of regional anatomy that can be obtained in no other way. The surgeon, who gets a direct view of the abdominal viscera, sees them under abnormal circumstances of local or general anesthesia; the anatomist in the dissecting room sees the abdominal organs in a very much altered state from the living. The roentgenologist with his opaque meal or opaque enema is enabled to study the living and normally functioning abdominal organs. Of Barclay's work, 180 pages are devoted to a study of normal anatomy and physiology—the mechanics of digestion. Anatomy and physiology and pathology, says the author, the



roentgenologist sees as a whole; they are not compartmentalized. It is the task of the roentgenologist to study the living functioning human being. To quote Barclay:

"It is for him to take the bare facts of descriptive anatomy and clothe them with the attributes of life; to take the observations of the physiologist and show whether the deductions from the laboratory and animal experiments are applicable to the living subject; and to interpret the changes in the normal shadows that are the result of disease. The waywardness of Nature, the entire absence of standards both in form and functions, make it impossible for medicine ever to be an exact science. What a dull business it would become if it could be reduced to formulæ! For many of us it would cease to have any attraction. The incalculability of the human element, the balancing of a hundred bits of insufficient, and perhaps contrary, evidence call up in us that indefinable instinct that goes by the name of clinical sense. It is this that makes medicine such a fascinating study, one in which the greatest masters are ever students, learning by experience to their last days. The radiologist must study medicine and its auxiliary branches from his own angle, and the wider his clinical knowledge, the more valuable will be his opinion." (An example of the author's style.)

This precludes the possibility of the subject ever revealing itself to the possessor of an x-ray apparatus who is not willing to pay the price in years of conscientious study.

Following the study of the normal digestive tract, the author devotes the remainder of the work to the pathology it may be heir to. Barclay alive and active, was contemporary with many of the pioneer roentgenologists who have passed away. To mention two in our own state are Hickey and Crane whose work he has acknowledged. The author's use of illustration is a feature deserving of special comment. His pictures have a purpose. Some are half-tones from roentgenographs; some are inked in from drawings based on radiographs; others are line drawings. But all, together with his lucid descriptions, make a text that is clarity itself. The work is delightful reading. The author never permits himself to become bogged in the mire of sesquipedalian verbiage that too often mars medical writing. Another notable feature is the concise inclusion of the author's technic, of interest to those who operate or supervise the operation of x-ray apparatus in the examination of the digestive tract. The appendix of the work contains important sections on such subjects as planning an x-ray department, radiation, risks of the roentgenologist, international recommendations for x-ray and radium protection. "The Digestive Tract" is the clearest and most comprehensive work on the subject we have seen. Its appeal is not only to the roentgenologist but to general practitioners and gastroenterologists to whom patients with impaired digestion go for relief.

**THE MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS.** By John Albert Key, B.S., M.D. Clinical Professor of Orthopedic Surgery, Washington University School of Medicine. Second Edition. St. Louis: The C. V. Mosby Company, 1937.

In this book the authors give a comprehensive discussion of fractures and other injuries involving the bony structure of the body. The general principle involved in treatment and the processes of repair and the complications that may accompany these injuries are discussed in the early chapters. Consideration is given to the equipment nec-

essary in this work and there are illustrations showing the various beds, splints, etc., that are to be used. There is a chapter on the general treatment of compound fractures in which the authors give in detail the general principles that they follow in the treatment of this type of injury. Finally specific fractures, their diagnosis and treatment are taken up in detail. The several methods of treating a specific fracture, including the use of skeletal traction, are given. Throughout the work there are many illustrations showing exact methods of diagnosis, of reduction and of the application of the several types of retention apparatus. Reproductions of x-rays add materially to the value in diagnosis. Anatomical considerations involved in the maintaining of fractures in position are illustrated by many drawings. The working-man's compensation laws affecting fractures and the medico-legal aspects of these cases are, also, covered.

A cub reporter, frequently reprimanded for prolixity and warned to be brief, turned in the following:

"A shocking affair occurred last night. Sir Edward Hopeless, a guest at Lady Panmore's ball, complained of feeling ill, took his hat, his coat, his departure, no notice of his friends, a taxi, a pistol from his pocket, and finally his life. Nice chap. Regrets and all that.

## AMONG OUR CONTRIBUTORS

**Dr. John T. Murphy** is a graduate of Toledo Medical College, 1906, and his specialty is radiology. He is a past president of the American Roentgen Ray Society and American College of Radiology, and is secretary of the Radiological Section of the American Medical Association.

\* \* \*

**Dr. Oliver S. Ormsby** is Clinical Professor and Chairman of the Department of Dermatology, Rush Medical College of the University of Chicago. He is also Dermatologist to the Presbyterian Hospital and a member of the American Dermatological Association. Dr. Ormsby is a corresponding member of the Section of Dermatology of the Royal Society of Medicine, London.

\* \* \*

**Dr. Louis A. Schwartz** is a graduate of the University of Michigan. He is Psychiatrist, consultation bureau of the Community Fund and Social Service Federation of Toledo, Ohio. He is on the staff of Harper Hospital, Woman's Hospital, the North End Clinic and is lecturer on Neurology, Wayne University, and lecturer on Mental Hygiene and Child Guidance, University of Michigan.

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## Table of Contents

The Diagnostic and Therapeutic Value of the Medical Social Study of Cases. <i>George P. Reynolds, M.D.</i> .....	217	The Editor's Easy Chair: Usefulness of Useless Knowledge.....	254
Examination of the Cervix Uteri. <i>Howard H. Cummings, M.D.</i> .....	223	Post-Graduate Program for 1938.....	256
Strabismus. <i>F. Bruce Fralick, M.D.</i> .....	226	President's Page: Quality Medical Service for All.....	257
An Analysis of the Contribution Made by Pneumoencephalography to Neurological Diagnosis. <i>S. Stephen Bohn, M.D.</i> .....	229	Why People Go South in the Winter.....	258
Problems in Venereal Disease Control. <i>Loren Shaffer, M.D.</i> .....	232	The Business Side of Medicine: "How's Business" .....	259
The Education of the Public in Cancer. <i>Osborne Allen Brines, M.D.</i> .....	236	Society Activity: Press Relations Kent County Plan.....	260
Report of Observations of the Insulin Hypoglycemic Shock Treatment of Psychotic Patients. <i>L. C. Grosh, Jr., M.D.</i> .....	238	Study of Medical Care by County Societies	261
Editorial: Treating Mind and Body.....	250	What is a Social Worker?.....	261
Coöperative Medicine .....	250	Northwest Regional Conference.....	262
Fewer, Not a Greater Number of Doctors..	251	Communication .....	262
Street Accidents .....	252	Mid-Winter Meeting of the Council.....	263
Rollin Howard Stevens Honored.....	253	County Societies .....	274
Mental Hygiene .....	253	Woman's Auxiliary .....	276
		Among Our Contributors.....	278
		Michigan's Department of Health.....	278
		In Memoriam .....	282
		General News and Announcements.....	283

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All photographs as illustrations should be clearly focused prints on glossy paper (do not send negatives). The standard 8x10 or 5x7 size prints are recommended.

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Illustrations will not be accepted unless they reach a certain standard of excellence technically and present an attractive appearance. Illustrations, both photographs and drawings, are to be separate from the text. Each should be labeled on the back with the figure number, legend, title of paper and the author's name.

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